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See Endorsements in SAUNDERS ADVERTISEMENT—Page 3

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SEVERE ENDEMIC PELLAGRA

A CLINICAL STUDY OF FIFTY CASES WITH SPECIAL EMPHASIS ON THERAPY

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CINCINNATI

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AND

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The pellagra of the northern part of the United States is for the most part associated with chronic alcoholism, whereas that found in the Southern states usually is not. Even though observations [1] on large numbers of pellagrins have shown that both the endemic and so-called alcoholic types usually have a predisposing dietary insufficiency, the same seasonal occurrence, the same symptomatology and similar lesions, there is still controversy as to whether the two are the same disease. Previous studies showed that the mortality rate among patients with severe pellagra, the majority of whom were addicted to alcohol, could be reduced from 54 per cent to 6 per cent in a series of 125 cases.[2] The death rate from severe endemic pellagra, however, has remained high, irrespective of the method of treatment.[3] Since endemic pellagra and the pellagra associated with chronic alcoholic addiction are clinically indistinguishable, and since the mortality rate among patients with severe endemic pellagra is high, it seemed imperative that we should apply to patients with endemic pellagra those methods of treatment which had lowered the death rate significantly among the so-called alcoholic pellagrins. Such a study is presented in this communication.

MATERIAL AND METHODS

It was decided before undertaking the present study that beginning March 1, 1936, fifty consecutive cases of severe endemic pellagra would be admitted either to the Hillman or to the T. C. I. Hospital [4] for treatment.

Selection of Cases.—Pellagra was diagnosed by the presence of characteristic skin and oral lesions. The disease was considered severe if, in addition to a poor general condition, the pellagrin had one or more of the following manifestations of pellagra: mental symptoms, persistent vomiting, intractable diarrhea, an inexplicable elevation in temperature to more than 102 F., a heart rate of more than 120 with the patient at rest, or stomatitis so severe that the patient did not want to eat. The disease was considered mild if the pellagrin's general condition was good and if he had none of the ominous manifestations of pellagra mentioned. No pellagrin was excluded from the study because of the presence of a coexisting disease.

The selection of the fifty severe endemic cases for the present study was made from a total number of 696 persons suspected of having pellagra. These persons either came of their own accord to the Hillman Hospital for treatment or were referred by the physicians of Jefferson County, by the Red Cross authorities, or by the public health departments of Birmingham and Jefferson County. The initial examination of the 696 pellagra suspects showed that 568 had no physical signs diagnostic of acute pellagra (many did have symptoms suggestive of the disease and residual dermal changes from previous attacks), ninety had mild pellagra, three persons with severe alcoholic addiction had severe "alcoholic pellagra," and thirty-five had severe endemic pellagra.

After the initial examination, the 568 persons with no evidence of acute pellagra were told to return to the referring physician or organization. So far as could be ascertained, none of these patients developed manifestations of acute pellagra from the time they were seen by us until June 15, 1936 (the termination of the study). Responsibility was immediately assumed for all persons on whom a diagnosis of pellagra had been made. Accordingly, the ninety patients with mild pellagra were advised to return to their homes and take yeast and a highly nutritious diet rich in milk, eggs, vegetables and protein and were told to return to the hospital for observation at stated intervals. Seventy-five of the ninety patients with mild pellagra improved. The remaining fifteen either could not or would not follow recommendations and the disease became worse. The fact that these fifteen patients formerly having mild pellagra later had the disease in a severe form means that the disease became worse and not that the original interpretation was incorrect. After the development of the severe manifestations these fifteen were

This study was conceived by Dr. M. A. Blankenhorn, Dr. James S. McLester and Dr. Joseph T. Wearn. The professional and administrative responsibilities of organizing and carrying out the study were assumed by Dr. R. H. Bishop Jr., Dr. Blankenhorn, Dr. Alfred Friedlander, Dr. McLester and Dr. Wearn. The project was a cooperative one between the University Hospitals of Cleveland, the College of Medicine of the University of Cincinnati, the University of Alabama, the Hillman Hospital of Birmingham, Ala., and the Tennessee Coal, Iron and Railway Hospital (T. C. I. Hospital) of Ensley, Ala. Financial grants were obtained through the University Hospitals of Cleveland and through the May Fund of the School of Medicine of the University of Cincinnati. The investigation was conducted by the authors, who were assisted by Miss Jean Grant, dietitian, and Miss Ann Van Blaricom, nurse. The professional and administrative staffs of the Hillman and T. C. I. hospitals gave invaluable aid in the selection and care of the fifty patients admitted to the hospital.

1. (*a*) Spies, T. D., and De Wolf, H. F.: Observations on the Etiological Relationship of Severe Alcoholism to Pellagra, Am. J. M. Sc. **186:** 521 (Oct.) 1933. (*b*) Unpublished observations.
2. Spies, T. D.: The Treatment of Pellagra, J. A. M. A. **104:** 1377 (April 20) 1935.
3. (*a*) McLester, J. S.: The Nature of Pellagra: A Critique, Ann. Int. Med. **8:** 475 (Oct.) 1934. (*b*) Boggs, T. R., and Padget, Paul: Pellagra, Bull. Johns Hopkins Hosp. **50:** 21 (Jan.) 1932.

4. The Hillman Hospital is a county hospital admitting indigent patients only. The T. C. I. Hospital of Ensley, Ala., admits indigent patients and employees.

counted as severe cases, were admitted to the hospital, and are included in the present study of fifty selected cases of severe endemic pellagra.

The three patients with pellagra secondary to chronic alcoholic addiction were sent to private physicians, who treated them successfully by the methods described in this paper. Since the disease in these three persons was accompanied by chronic alcoholism, these cases are not included in the present series.

In order that our responsibility might best be fulfilled toward the fifty patients with severe endemic pellagra, forty-seven were admitted to the Hillman Hospital and the remaining three to the T. C. I. Hospital. Each of these patients was examined from time to time by the regular house officers and by the visiting staff of the institution. Other consultants often examined the patients and concurred in the diagnosis of severe pellagra.

DIET 1.—*"Solid" Diet*

Food Included in One Day	Weight in Gm.	Approximate Amount	Gm. Protein	Gm. Fat	Gm. Carbohydrates
Sweet milk in eggnog, yeast mixture and as beverage	1,900	9½ aver. glasses	63	76	95
Eggs	250	5 eggs	33	25	
Lean meat	120	4 ounces	28	16	
Butter	60	6 squares	1	51	
Fat: lard or pork fat used in cooking vegetables and meat	15	1 tablespoonful	..	15	
Potato	150	large serving	3	..	27
Dried beans or peas, dry weight	30	average serving	6	..	18
5 or 10% vegetable, cooked	100	average serving	1	..	5
5% vegetable, raw	100	large serving	1	..	5
Fruit, stewed or canned	100	average serving	1	..	20
Fruit, raw	100	average serving	1	..	10
Bread, white	180	6 slices	16	2	95
Cornbread	60	average serving	6	7	18
Cereal, cooked weight	150	large serving	3	..	23
Dessert: rice, cornstarch, tapioca or bread pudding	90	average serving	4	5	30
Ice cream	200	2 aver. servings	8	12	28
Sugar	30	2 tablespoonfuls	..	..	30
Harris brewers' yeast	90	3 ounces	45	18	27
Total			220	227	431
Calories from protein					880
Calories from fat					2,043
Calories from carbohydrates					1,724
Total calories					4,647

Outline of Meals and Between Meal Feedings

	Time	Food	Weight in Gm.	Approximate Amount
	7 a. m.	Milk	200	average glass
		Yeast	30	1 ounce
Breakfast	8 a. m.	Fruit, raw	100	average serving
		Cereal, cooked	150	large serving
		Milk	100	½ average glass
		Toast, white bread	60	2 slices
		Butter	20	2 squares
		Eggs, soft cooked	100	2 eggs
		Milk	200	average glass
		Sugar	15	1 tablespoonful
		Coffee	...	if desired
	10 a. m.	Eggnog	250	large glass
		Ice cream	100	average serving
	11 a. m.	Milk	200	average glass
		Yeast	30	1 ounce
Dinner	12 a. m.	Lean meat	60	2 ounces
		Potato	150	large serving
		5 or 10% vegetable, cooked	100	average serving
		Bread, white	60	2 slices
		Cornbread	60	average serving
		Butter	20	2 squares
		Dessert, pudding	90	average serving
		Milk	200	average glass
	2 p. m.	Eggnog	250	large glass
		Ice cream	100	average serving
	4 p. m.	Milk	200	average glass
		Yeast	30	1 ounce
Supper	5 p. m.	Lean meat	60	2 ounces
		Dried beans or peas, dry wt.	30	average serving
		5% vegetable, raw	100	large serving
		Bread, white	60	2 slices
		Butter	20	2 squares
		Fruit, stewed or canned	100	average serving
		Milk	200	average glass
	8 p. m.	Eggnog	250	large glass

The manner and criteria of selection of the fifty severe cases were reviewed in detail toward the end of the study at a meeting of the physicians of the Hillman Hospital and many of the physicians of Birmingham. A number of the patients were shown at this meeting, discussion and criticism being welcomed. No dissenting opinion concerning the methods of selection or diagnosis of cases was offered.

DIET 2.—*"Soft-Solid" Diet*

Food Included in One Day	Weight in Gm.	Approximate Amount	Gm. Protein	Gm. Fat	Gm. Carbohydrates
Sweet milk in eggnog, yeast mixture and as beverage	2,100	10½ av. glasses	69	84	105
Eggs	450	9 eggs	60	47	
Butter	10	1 square	..	8	
Potato	150	large serving	3	..	27
Cereal, cooked weight	300	2 large servings	6	..	46
Cream soup	360	2 aver. servings	10	22	26
Bread for milk toast	30	1 slice	2	..	15
Dessert: rice, cornstarch, tapioca or bread pudding	180	2 aver. servings	8	10	60
Ice cream	300	3 aver. servings	12	18	42
Applesauce	200	2 aver. servings	..	..	74
Sugar	30	2⅓ tablespoonfuls	..	..	35
Harris brewers' yeast	90	3 ounces	45	18	27
Total			215	207	457
Calories from protein					860
Calories from fat					1,863
Calories from carbohydrates					1,828
Total calories					4,551

Outline of Meals and Between Meal Feedings

	Time	Food	Weight in Gm.	Approximate Amount
	7 a. m.	Milk	200	average glass
		Yeast	30	1 ounce
Breakfast	8 a. m.	Applesauce	100	average serving
		Cereal, cooked	150	large serving
		Milk	100	½ average glass
		Eggs, soft cooked	100	2 eggs
		Milk toast		
		Toast, white bread	30	1 slice
		Milk	100	½ average glass
		Butter	10	1 square
		Milk	200	average glass
		Sugar	15	1 tablespoonful
		Coffee	...	if desired
	10 a. m.	Eggnog	250	large glass
		Ice cream	100	average serving
	11 a. m.	Milk	200	average glass
		Yeast	30	1 ounce
Dinner	12 a. m.	Cream soup	180	average serving
		Soft cooked eggs	100	2 eggs
		Mashed potato	150	large serving
		Dessert, pudding	90	average serving
		Milk	200	average glass
	2 p. m.	Eggnog	250	large glass
		Ice cream	100	average serving
	4 p. m.	Milk	200	average glass
		Yeast	30	1 ounce
Supper	5 p. m.	Cream soup	180	average serving
		Eggs, soft cooked	100	2 eggs
		Cereal, cooked	150	large serving
		Milk	100	½ average glass
		Dessert, pudding	90	average serving
		Milk	200	average glass
		Sugar	5	1 teaspoonful
	8 p. m.	Eggnog	250	large glass
		Ice cream	100	average serving
	10 p. m.	Applesauce	100	average serving

At all times the authors assumed the full responsibility for the treatment of these patients. The present report deals only with the fifty patients with severe endemic pellagra admitted to the hospital for study and treatment.

Method of Clinical Study.—When obtainable, the following data on each of the fifty patients were recorded: race, sex, age, presence or absence of dermatitis, glossitis, stomatitis, peripheral neuritis, loss of weight or strength, elevation in pulse rate, previous attacks of the disease, and the presence of other diseases. Special studies concerning the quantity and

quality of the food eaten by these patients in their homes prior to admission to the hospital were made and will be reported in a separate communication.

A patient was arbitrarily considered as having an anemia if the hemoglobin value on repeated examination was less than 70 per cent. He was considered as having tachycardia if the heart rate was 90 or above on two or more examinations when the patient was at rest in bed. Previous attacks of pellagra were counted as such only if a diagnosis of pellagra had been made by a physician at the time. The presence of other diseases was determined by clinical and laboratory examinations.

Method of Treatment.—Each of the fifty pellagrins was treated individually and was given adequate professional and nursing care in order that the general and specific therapeutic measures might be effectively applied. After the diagnosis of severe endemic pellagra had been made, each pellagrin was admitted to the ward, confined to bed, and given antipellagric therapy immediately. In order to keep the patients alive, it was also necessary, in certain instances, to give prompt supportive treatment to those who were at the point of death and to apply specific therapeutic measures to those with coexisting organic diseases.

General Therapeutic Measures.—All patients were kept in bed until convalescence was well established. At times this was accomplished only after large doses of sedatives had been administered. Constant nursing care was given to conserve the patient's strength, to assure adequate rest, to give the specific and symptomatic therapeutic materials, and to aid in applying suitable dietary measures. An effort was made to give each pellagrin a well balanced diet of 4,500 calories or more each day. Every detail of the intake of food was supervised to make certain that an adequate diet was ingested and retained daily. When large amounts of food were lost because of vomiting or diarrhea, corresponding additional amounts were given.

Dietary Management.—In order to make sure that each pellagrin received and retained as much food as possible, he was urged by the physicians, nurses and dietitian to eat one of three diets each of which was high in calories and rich in protein. Every effort was made to see that the patients took as much solid food as possible. Therefore, at the time of admission, a "solid" diet (diet 1) was prescribed for every pellagrin. When a patient could not continue to eat it, he was given a "soft-solid"diet (diet 2) until he had improved sufficiently to eat the "solid" diet. Those unable to eat either the "solid" or "soft-solid" diet were administered a "liquid" diet (diet 3) until they could eat the "soft-solid" diet. Twenty-seven of the fifty patients continued to eat the foods in diet 1 from the time they were admitted to the hospital until the day of discharge. Seventeen of the twenty-three patients who could not eat the diet were given the "soft-solid" diet for their first three days in the hospital and were then continued on the "solid" diet throughout the remainder of their hospitalization. The remaining six patients ingested the "liquid" diet for from forty-eight to seventy-two hours before they improved sufficiently to take the "soft-solid" diet. By the eighth day of hospitalization, all six were able to eat the "solid" diet.

Specific Therapeutic Agents.—All patients were given from 180 to 270 Gm. of powdered brewers' yeast [5] daily. They tolerated this best when it was given in doses of about 20 Gm. in iced milk. Four patients with severe glossitis, diarrhea and vomiting were given intravenous liver extract [6] injections of 20 cc. each from four to five times a day in addition to the yeast. These injections were continued until improvement took place (usually two or three days).

DIET 3.—*"Liquid" Diet*

Food Included in One Day	Weight in Gm.	Approximate Amount	Gm. Protein	Gm. Fat	Gm. Carbohydrates
Sweet milk, in eggnog	2,400	12 aver. glasses	79	90	120
Cream, 18%	120	4 ounces	3	24	6
Eggs	450	9 eggs	60	47	
Cereal, cooked and strained	300	2 large servings	6	..	46
Cream soup	360	2 aver. servings	10	22	26
Ice cream	600	6 aver. servings	24	36	84
Sugar	45	3 tablespoonfuls	..	..	45
Harris brewers' yeast	90	3 ounces	45	18	27
Total			227	243	354

Calories from protein	908
Calories from fat	2,187
Calories from carbohydrates	1,416
Total calories	4,511

Outline of Feedings

Time	Food	Weight in Gm.	Approximate Amount
7 a. m.	Milk	200	average glass
	Yeast	30	1 ounce
8 a. m.	Strained cereal { Cereal	150	large serving
	Cream, 18% { Gruel	60	¼ cup
9 a. m.	Ice cream	100	average serving
10 a. m.	Eggnog	250	large glass
11 a. m.	Milk	200	average glass
	Yeast	30	1 ounce
	Ice cream	100	average serving
12 a. m.	Cream soup	180	average serving
1 p. m.	Ice cream	100	average serving
2 p. m.	Eggnog	250	large glass
3 p. m.	Eggnog	250	large glass
4 p. m.	Milk	200	average glass
	Yeast	30	1 ounce
	Ice cream	100	average serving
5 p. m.	Eggnog	250	large glass
6 p. m.	Cream soup	180	average serving
7 p. m.	Ice cream	100	average serving
8 p. m.	Eggnog	250	large glass
9 p. m.	Eggnog	250	large glass
10 p. m.	Ice cream	100	average serving
11 p. m.	Strained cereal { Cereal	150	large serving
	Cream 18% { Gruel	60	¼ cup
12 p. m.	Eggnog	250	large glass
4 a. m.	Eggnog	250	large glass
6 a. m.	Eggnog	250	large glass

Method of Making Yeast Mixture and Eggnog

Yeast Mixture

Materials: 600 cc. of milk; 90 Gm. of yeast

Method: Pour milk into a mixing bowl. Put the yeast in a shaker and sift it into the milk, stirring constantly

Eggnog

Materials: 3 eggs, 15 Gm. of sugar, 600 cc. of milk

Method: Beat eggs, add sugar, add milk, beat well. If desired, flavor with vanilla

Special Treatment of Symptoms.—Skin Lesions: The application of potassium permanganate solution (1:5,000) to the moist type of pellagrous dermatitis often gave relief from the burning sensations and diminished the number of secondary infections.

Diarrhea: As a rule, pellagrous diarrhea ceased only when the pellagra had improved. The number and the amount of the stools were often increased following the administration of large amounts of yeast or food

5. Supplied by Dr. I. F. Harris, Tuckahoe, New York.

6. Furnished through the courtesy of Dr. E. A. Sharp, Parke, Davis & Co., Detroit.

but, irrespective of this, the patients were forced to take additional amounts of food to make up for the loss through diarrhea. Some of the patients seemed to be relieved from diarrhea by the administration of tincture of opium in doses of 2 cc. until 10 cc. a day had been given or until signs of toxicity appeared. In the cases of severe dehydration, parenteral injections of saline solution were given.

Abdominal Pain: Most of the patients had abdominal pain soon after eating. Tincture of opium, 2 cc., was used to alleviate this pain when an analgesic was required.

Anemia: Four patients having dyspnea and a hemoglobin value below 50 per cent were benefited by blood transfusions.

Fever: Patients with temperature elevations were bathed with alcohol, and their general condition was thereby improved for a short time.

Tachycardia: Patients with tachycardia were kept in bed until the heart rate was normal. When they were first allowed to get up, they were watched carefully for symptoms of vasomotor collapse.

Mental Symptoms: Large doses of bromide and barbital were administered to the maniacal type of patient, but care was taken not to render the patients stuporous over long periods of time.

DIET 4.—*Diet Recommended After Discharge*

Food	Amount
Sweet milk	1 quart
Eggs	4
Lean meat	¼ to ½ pound
Vegetables: potatoes, butter beans, black-eyed peas and navy beans	2 servings
Other vegetables: spinach, greens, carrots, beets, tomatoes, cabbage, English peas or any other vegetable	2 servings
Fruit, any kind	1 or 2 servings
Bread, any kind	6 slices; 2 slices of corn bread may be used in place of white or whole wheat bread
Cereal, any kind	large serving

Peripheral Neuritis: Sedatives and analgesics were often required to relieve the pain so that the patients could sleep. Some of the milder cases were aided either by ice bags or 1 per cent phenol and menthol applied over areas of hyperesthesia.

Decubitus: Decubitus was prevented by conscientious nursing care.

Recommended Therapy After Discharge.—On discharge from the hospital, all patients were instructed to take the prescribed amount of a highly nutritious diet each day at home (diet 4). This diet consists of 1,950 calories and contains 104 Gm. of protein. Each person was allowed to eat additional amounts of any of these foods if he wished and was permitted to eat other foods after he had eaten the full amount of the prescribed diet. Food was purchased until June 10 for many of the patients who could not afford to buy the required amounts. All patients were seen frequently in their homes following discharge from the hospital. Three of the fifty had a definite relapse of their disease within a month, although they claimed that they had followed the prescribed diet carefully. These three patients were readmitted to the hospital for special study, the results of which will be reported at a future date.

OBSERVATIONS

Forty-seven of fifty patients admitted to the hospital with severe endemic pellagra improved and were discharged to their homes free from symptoms. The remaining three died, but at the time of death each showed healed or healing pellagrous lesions.

Recovery was rapid in the forty-seven cases in which there was remission of the disease. Within twenty-four hours after treatment was initiated, the oral and dermal lesions began to heal and the patients' sense of well being improved remarkably. The average number of days in the hospital for these forty-seven patients was nine. The fifty patients included twenty-one males, nineteen white and two colored, and twenty-nine females, nineteen white and ten colored. The average age was 43 years. The age, sex, race of the patient or the occurrence of previous attacks of the disease did not affect the rate of recovery, as shown in the table.

Studies in each of the fifty cases showed that all the patients had a loss of strength, forty-one had pellagrous glossitis, thirty-three pellagrous stomatitis, forty-eight pellagrous dermatitis, twenty-eight vomiting, twenty-nine diarrhea, twenty-seven mental symptoms, thirty-one peripheral neuritis, forty-nine loss of weight (in the other patient the loss of weight, if any, could not be determined because of edema) and thirty-one had had previous attacks of pellagra. Thirty-nine out of forty-nine had an elevation in pulse rate on more than two occasions, twenty of the thirty-three patients examined had an anemia, and fifteen of the thirty-eight patients examined had achylia gastrica following histamine injection. Fifteen of the fifty patients had an organic disease other than pellagra. Five had heart disease, three intestinal stricture, two pulmonary tuberculosis, two diabetes, two pulmonary infarction and one nontuberculous respiratory infection.

As has already been stated, three of the patients died. Postmortem studies were made by Dr. Benjamin Morton and Dr. G. S. Graham. Brief summaries of the clinical course and pathologic changes in these three cases are given:

CASE 1.—V. O., a colored woman, aged 33, was well until July 1935, when she developed pain in the lower part of the abdomen. In September 1935 she had an operation for ovarian tumor and at the end of two weeks was discharged from the hospital. A month after the operation was performed, a large fistulous opening appeared in the abdominal incision. From that time on the patient passed large amounts of liquid fecal material through the fistula, but she rarely passed any material by rectum. She became weaker steadily and her family noticed that she was losing weight. March 3, 1936, she was admitted in a dying condition to the surgical service of the Hillman Hospital. She was unable to talk coherently and was emaciated to a degree rarely seen. Her pulse was weak, rapid and thready. Bilaterally symmetrical areas of pellagrous dermatitis were observed over her face, arms, legs and body. Severe pellagrous stomatitis, glossitis and vaginitis were also present. Immediate symptomatic and antipellagric therapy was initiated, and within forty-eight hours the pellagrous lesions were healing. They continued to heal until the time of her sudden death on the fourteenth day of hospitalization.

Postmortem examination showed healed and healing pellagrous lesions, a large ball-valve clot in the right auricle, and a large hard and well formed pulmonary embolus occluding one of the main branches of the pulmonary artery. The fistulous opening was about 3.5 cm. in diameter and connected the midportion of the ileum with the old abdominal scar.

CASE 2.—E. H., a colored woman, aged 26, was in good health until November 1934, when she passed large amounts of blood by rectum. From that time on she found it necessary to take large doses of laxative, and even then her stools were never as large as a lead pencil. Soon afterward she stopped eating solid food because of the abdominal pain that invariably followed. During February 1936 her mouth and tongue became sore, and a dermatitis appeared over the dorsum of her hands

and feet. Because of the severity of these symptoms the patient was forced to stay in bed. Her arms and legs became paralyzed and she had periods of unconsciousness which often lasted for several days. April 8, 1936, she was admitted moribund to the surgical service of the Hillman Hospital, where a diagnosis of rectal stricture, intestinal obstruction and severe pellagra was made. On admission she was given immediate supportive and antipellagric therapy. The pellagrous lesions healed remarkably prior to her death on her eighth day in the hospital.

Postmortem examination revealed multiple large and small pulmonary infarctions in both lungs. Large, firm, pulmonary emboli occluded the main branches of the right and left pulmonary arteries, and the ovarian and hemorrhoidal vessels were thrombotic. The sigmoid and rectum were occluded for a distance of 6 inches by a chronic inflammatory process (?lymphogranuloma inguinale).

CASE 3.—J. S., a colored woman, aged 64, was in good health until early in 1933, when she had trouble with her "teeth and kidneys." Since that time she has had considerable difficulty in chewing. Early in January 1936 she noticed a loss of appetite, sore mouth and severe diarrhea, often having as many as twenty stools a day. A month later a dermatitis appeared over the dorsum of her hands and feet. March 2, 1936, she was admitted to the surgical division of the Hillman Hospital because of rectal stricture and hemorrhoids, which were of such severity that, despite the patient's poor general condition, an operation was performed at once. Soon after the operation the patient was seen in consultation. She was emaciated and had extensive pellagrous stomatitis, glossitis and dermatitis. Antipellagric therapy was initiated at once and the pellagrous lesions rapidly disappeared. At the time of the patient's sudden death on her twenty-fourth day in the hospital she had no signs or symptoms of pellagra.

Postmortem examination showed an occluded rectal and sigmoid stricture (?lymphogranuloma inguinale), proctitis and arteriosclerosis. The pathologist found no evidence of pellagra.

COMMENT

It has been shown in the present study that forty-seven of fifty patients with severe endemic pellagra, admitted to the hospital for treatment, recovered when given a high caloric, high protein diet, large amounts of a potent, specific therapeutic agent, symptomatic and supportive treatment, rest, and good nursing care. It must be fully understood that the ingestion and assimilation of a proper diet and specific therapeutic agents and the rigid application of the general principles of treatment are much more important than the symptomatic treatment. The latter, however, often affords the patients comfort and, in certain instances, aids in remitting the disease. Exacerbation of any gastrointestinal symptoms must not deter the physician from continuing the administration of proper diets or therapeutic substances. Uncomplicated cases of pellagra will rarely be fatal provided early, prompt, intensive and persistent treatment is given. The remaining three patients died, but each of them was admitted to the hospital because she had, in addition to pellagra, a disease requiring surgical treatment. In none of them can it be said that pellagra alone was the cause of death. Autopsies on each patient showed the presence of an organic disease in itself capable of causing death and, in each instance, healing pellagrous lesions.

In a previous study [1a] it was shown that the signs and symptoms, seasonal occurrence and predisposing dietary insufficiency are the same for the so-called alcoholic and the endemic types of pellagra. Present observations show that the patient with endemic pellagra is remitted of his disease by the rigid application of the same general principles of treatment as is the so-called alcoholic pellagrin.

Analysis of Fifty Cases of Severe Endemic Pellagra

Race and Sex	Number of Cases	Average Age		Dermatitis	Glossitis	Stomatitis	Vomiting	Diarrhea	Anemia	Achylia Gastrica	Mental Symptoms	Peripheral Neuritis	Loss of Weight and Strength	Tachycardia	Previous Attacks	Other Diseases	Death	Autopsy
White males	19	46	Yes	18	12	10	10	10	3	8	8	11	19	13	13	5	0	0
			No	1	7	9	9	9	11	7	11	8	0	6	6	14		
			N. D.	0	0	0	0	0	5	4	0	0	0	0	0	0		
White females	19	39	Yes	18	19	14	9	9	8	5	11	13	19	16	15	2	0	0
			No	1	0	5	10	10	1	11	8	6	0	2	4	17		
			N. D.	0	0	0	0	0	10	3	0	0	0	1	0	0		
Black males	2	51	Yes	2	2	2	2	2	1	1	1	2	2	1	0	0	0	0
			No	0	0	0	0	0	0	0	1	0	0	1	2	2		
			N. D.	0	0	0	0	0	1	1	0	0	0	0	0	0		
Black females	10	36	Yes	10	8	7	7	8	8	1	7	5	10	9	3	8	3	3
			No	0	2	3	3	2	1	5	3	5	0	1	7	2		
			N. D.	0	0	0	0	0	1	4	0	0	*	0	0	0		
Totals	50	43	Yes	48	41	33	28	29	20	15	27	31	50	39	31	15	3	3
			No	2	9	17	22	21	13	23	23	19	0	10	19	35		
			N. D.	0	0	0	0	0	17	12	0	0	*	1	0	0		

N. D. = no data.
* One patient had edema and weight loss, if any, could not be accurately determined.

SUMMARY AND CONCLUSIONS

1. Fifty cases of severe endemic pellagra were admitted to either the Hillman or the T. C. I. Hospital and, as a result of the efficacy of treatment, only three deaths occurred. The previous death rate in the Hillman Hospital had been 32 per cent.[3a]

2. Postmortem examination of the three pellagrins who died showed the primary cause of death to be in case 1 a pulmonary embolus and a ball-valve thrombus of the right auricle and in case 2 bilateral pulmonary emboli, thrombophlebitis of the ovarian and hemorrhoidal veins, and stricture of the sigmoid and rectum. In case 3 the primary cause of death was not fully determined; this patient was operated on for an occluding lesion of the rectum and sigmoid, and an exact interpretation of this lesion and of the operation in terms of the cause of death was impossible. In each case the lesions of pellagra were either healed or showed definite signs of healing.

3. The signs and symptoms, the predisposing dietary insufficiency, the clinical course of the disease and the response to treatment of these patients with endemic pellagra were the same as those of pellagrins previously studied whose disease followed the chronic, excessive use of alcohol (so-called alcoholic pellagra).

4. These observations show that endemic pellagra, like so-called alcoholic pellagra, responds to the administration of a high caloric, high protein diet, large amounts of yeast, adequate rest and good nursing care.

DERMATOLOGIC VERSUS SURGICAL TREATMENT OF CARBUNCLES AND FURUNCLES

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In view of the fact that carbuncles and furuncles are such relatively common and well understood conditions, it is surprising that diametrically opposed methods of treatment are practiced. The incident which inspired this investigation was the demonstration of a patient by a surgeon at a hospital staff meeting. The case was presented to illustrate a successful and satisfactory outcome of the treatment of a carbuncle of the side of the face. The patient was alive, it is true, but his face was disfigured by an extensive crucial incision scar covering almost the whole side of the face. One of the authors who attended the staff meeting expressed the opinion that if a dermatologist had achieved such a result as the consequence of treating a carbuncle he would have preferred keeping the patient hidden rather than presenting him as an outcome to be proud of.

We have never found it necessary to resort to radical methods in the handling of carbuncles, yet conversation with surgical colleagues has disclosed that crucial incisions or radical cautery excisions are the rule. At the Los Angeles County General Hospital all carbuncle cases are admitted to the surgical service and the great majority of them are treated by radical methods.

In order to ascertain the accepted methods of treating carbuncles and facial furuncles, approximately 500 questionnaires were mailed to an equal number of representative dermatologists and surgeons in all parts of the country. A tabulation of the results of these questionnaires revealed the fact that dermatologists tend toward conservatism in the treatment of carbuncles, whereas surgeons are more inclined to use radical procedures. Both dermatologists and surgeons usually practice conservatism in the treatment of early facial furuncles.

The etiology and histology of the furuncle and carbuncle are so elementary that the barest outline will suffice to bring out the salient points. The furuncle is an external infection by a staphylococcus that has gained entrance to a hair follicle. An inflammatory reaction is set up along the whole length of the hair follicle. A densely packed zone of leukocytes appears at the center of the process. About these a walling off zone of fibroblasts appears, beyond this a loosely packed zone of leukocytes and fibroblasts and beyond this a zone of hyperemia. Usually the central portion of this concentric pattern undergoes necrosis and pus appears. Under ordinary conditions the pus makes its way to the surface along the hair follicle following the line of least resistance and appears at the surface of the skin as the yellow "head" of the boil. Sometimes, however, if the infection is especially virulent or the resistance of the patient is low, the infection extends deeply into the subcutaneous tissue along the columnae adiposae, spreading laterally along the panniculi adiposi and rising toward the surface along adjacent hair follicles, thus producing a large inflammatory area with multiple "heads" or a carbuncle. A carbuncle may range in size from that of a silver quarter (24 mm.) up to that of an adult hand or larger. Diabetes predisposes to large and extensive lesions.

The surgeon's traditional approach to this problem in the carbuncle stage is radical, usually consisting of an extensive crucial incision over the involved area and undercutting the flaps, or excising the whole area with the knife or the cautery, in either case attempting to remove the entire diseased area. With skilful technic the desired result is usually achieved, although the period of convalescence is likely to be long and the cosmetic end result is usually unsightly and in certain locations may be actually disfiguring.

The dermatologist approaches the treatment of a carbuncle from an entirely different point of view. Three considerations guide his treatment:

1. Arrest of the disease process.
2. A short convalescence.
3. A good cosmetic result.

If arresting the disease process were the only consideration, total excision or cautery destruction would undoubtedly achieve that end most rapidly. The most rapid method of destroying the diseased area, however, is often followed by a much slower period of healing and a bad cosmetic result. Except in most unusual circumstances, a slightly slower method of arresting the infection is not inimical to the welfare of the patient. In fact, the questionnaires show a lower mortality rate among cases treated by dermatologists using conservative methods than among those treated by surgeons using radical methods. One must evaluate this in the definition of carbuncles and in the difference in degree of severity of those treated by surgeons and by dermatologists.

Furuncles and carbuncles of the face, especially within the so-called dangerous circle, are considered much more serious than those occurring elsewhere, although we ourselves have never observed any serious complications in patients with lesions in this area. The reason for occasional fatalities resulting from carbuncles or furuncles within the "dangerous circle" is that a septic thrombophlebitis may develop in the angular vein extending to the cavernous sinus, or if on the lower part of the face the thrombophlebitis may extend downward into the external jugular vein.

For this reason it is generally agreed by surgeons and dermatologists alike that deep incision, squeezing or other manipulations should be avoided in the treatment of early carbuncles or furuncles of this area. If pus appears at the surface, it may be evacuated by lightly pricking the lesion. If the lesions show evidence of extension, and especially if fever and other symptoms suggest the development of thrombophlebitis, surgeons advocate interception of the process by ligating or cauterizing the angular vein near the bridge of the nose or the anterior facial vein near the jaw.

SUMMARY OF STATISTICS FROM QUESTIONNAIRES

The accompanying table summarizes the statistics contained in the questionnaires. Since answers to some of the questions were in round numbers, and the treatment of carbuncles and furuncles was not clearly differentiated in many cases, the figures are to be regarded as approximate. Unfortunately the question regarding cosmetic results was not answered in a sufficient number of cases to afford any basis for comparison. Without exception, dermatologists who answered this question reported good cosmetic results in cases treated conserva-

Based on an exhibit presented in the Scientific Exhibit at the Eighty-Seventh Annual Session of the American Medical Association, Kansas City, Mo., May 11 to 15, 1936.

tively. Most of the surgeons ignored the question and a few reported cosmetic results as being from fair to good. Under the heading of radical surgery it will be noted that 21 per cent of the cases of carbuncles treated by dermatologists were recorded as being treated radically. This does not give a true picture of the practice among dermatologists, however, as most of this group of cases occurred in the practice of one dermatologist who is associated with a large private group of physicians. The questionnaires specified that the heading "furuncle" was to include only those furuncles occurring about the face, head and neck; but some of the answers did not differentiate furuncles of the face from those occurring elsewhere.

The salient features of the answers to the questionnaires were that:

1. Dermatologists employ radical procedures much less frequently than surgeons.
2. Dermatologists employ x-rays much more frequently than surgeons.
3. The average duration of treatment by surgeons was nearly twice as long as under dermatologists.
4. The mortality was greater under surgical than under dermatologic treatment.

Summary of Replies to Questionnaire

	Dermatologists		Surgeons	
Questionnaires mailed	250		250	
Questionnaires answered	71		33	
	Carbuncle	Furuncle	Carbuncle	Furuncle
Cases treated in private practice in past five years	649	2,260	354	573
Radical surgery	21%		60%	
Incision and drainage	32%	49%	17%	64%
X-rays	65%	69%	19%	38%
Local applications: hot poultices	36%	31%	21%	68%
Wet dressings	74%	80%	81%	89%
Bacteriophage or bacterial filtrates	17%	11%	16%	38%
Ultraviolet or infra-red light	10%	4%	4%	35%
Phenol	16%	20%	10%	14%
Ichthammol (ichthyol)	4%	8%	....	1%
Ammoniated mercury ointment	3%	10%		
General measures: nonspecific protein therapy	4%	9%	3%	
Staphylococcus toxoid or vaccine	14%	17%	1%	5%
Tin or manganese	3%	8%	3%	3%
Average duration of treatment	16 days	10 days	27 days	16 days
Deaths	0.4%	0.3%	1.4%	0.7%

TECHNIC EMPLOYED BY AUTHORS

1. Unfiltered x-rays, in a dose of from one-fourth to one-half skin unit to the affected area. This may be repeated in about three days if necessary. The theory underlying the use of x-rays in furuncles or carbuncles is that certain cells, probably lymphocytes or leukocytes, being very radiosensitive, are broken down and liberate powerful antitoxic substances, which more effectively combat the infection. The protective wall of fibroblasts is apparently unaffected. X-rays exert little or no actual bactericidal effect.

2. Specific immunization. This is accomplished by two means. At the first visit a culture is taken from which is prepared an autogenous vaccine, which is administered intravenously at intervals of two or three days, the interval being increased later to four or five days. Recent investigations have shown that a higher degree of immunization is obtained by the intravenous method of administration of vaccines as compared with the subcutaneous or the intradermal route and that this immunization is accompanied by a desensitization to bacterial proteins, whereas vaccine administered by the other routes is sometimes followed by an increased sensitiveness to bacterial proteins. The usual beginning dose is twenty-five million organisms in the case of the staphylococcus, and this is increased to fifty million, one hundred million, two hundred million and so on. Severe systemic reactions are very infrequently encountered. The use of autogenous vaccine not only tends to shorten the course of the individual lesion but it is especially valuable in cases of recurrent furunculosis.

From the same culture obtained at the first visit one can prepare a suspension of bacteria for testing the lytic potency of a bacteriophage, and if the bacteriophage is active against the bacteria in question we have felt that the softening and resolution of the lesion was materially hastened by daily irrigation of the cavity of the lesion with bacteriophage and the use of a bacteriophage wet dressing for several hours following.

Formula of Alibour Water

	Gm. or Cc.
℞ Copper sulfate	1.6
Zinc sulfate	5.6
Saturated solution of camphor water	to 240.

Sig.: Dilute two tablespoonfuls to a glass of water and apply as a wet dressing.

3. Local applications. In addition to the foregoing, we have employed with much satisfaction continuous wet dressings of Alibour water, the value of which is twofold. It is nonirritating except in extremely rare cases, and it is a very potent antiseptic and astringent, exerting a definite bactericidal effect on the open lesion as well as preventing reinfection of neighboring hair follicles from the purulent discharge.

We also employ hot flaxseed poultices for about one hour twice a day, alternating with the wet dressings, on the time-honored theory that the heat and possibly some active principle of the flaxseed exert a beneficial softening and sedative effect on the lesion. The poultice is made by mixing flaxseed meal and boiling water, placing within a single layer of linen or muslin and applying over the lesion after it has cooled enough to be comfortably hot. As soon as it becomes cold it is replaced by a hot one, and this is repeated for at least one hour twice a day.

4. Drainage. The lesions should be kept open and draining if pus is present. We do not favor incising early lesions. A single one-half skin unit dose of x-rays will frequently abort them. However, if pus shows at the surface or if there is obvious fluctuation, incision is indicated. Frequently a slight prick with the point of the scalpel will free the pus. Two reasons for keeping free drainage are (*a*) to prevent deep burrowing and extension with the formation of a carbuncle and (*b*) to allow more effective action of topical applications.

5. Phenol puncture. This procedure has been in vogue for many years and is particularly valuable for softening tough necrotic sloughs and "cores." A pointed tooth pick is dipped into 95 per cent phenol and with very light pressure is bored into the necrotic mass. The anesthetic effect of the phenol prevents any pain and the central portion of the lesion so treated soon liquefies and facilitates drainage and resolution of the lesion.

6. General care. The extreme pain of furuncles and carbuncles justifies the use of appropriate sedatives such as acetylsalicylic acid or codeine and some sleeping aid such as sodium amytal at night. Bromides should be avoided, since they are sometimes excreted through the sebaceous glands and may cause a folliculitis. In acute or extensive cases, especially with involvement of the face, rest in bed is imperative, fluids should be forced and simple nourishing food administered, although, if the lip is involved, vigorous chewing should be avoided.

Any physical abnormalities such as anemia, focal infection, diabetes or gastro-intestinal disorders should

be sought out and treated. Dietary indiscretions should be corrected and an adequate vitamin intake assured. In our experience the use of yeast or tin preparations has not proved efficacious. Manganese has had a recent vogue, but we have had no experience with it.

SUMMARY

1. Questionnaires were mailed to approximately 250 surgeons and an equal number of dermatologists throughout the United States and Canada in an effort to appraise the methods employed in the treatment of carbuncles and facial furuncles.

2. The information obtained from the questionnaires corroborates our own experience in the treatment of these conditions and may be stated briefly as follows:

3. The great majority of surgeons employ crucial incisions or cautery excision of carbuncles, whereas the great majority of dermatologists employ conservative methods, including x-rays, vaccines, bacteriophage and topical applications.

4. The average duration of treatment of carbuncles under surgical treatment is almost twice as long as under dermatologic treatment.

5. The mortality from carbuncles is low in both groups, but it is more than three times as great under surgical as under dermatologic treatment.

6. Cosmetic results in our experience are infinitely superior under the conservative methods used by dermatologists as compared with the radical surgical procedures.

2007 Wilshire Boulevard.

PREVENTION OF GOITER IN MICHIGAN AND OHIO

O. P. KIMBALL, M.D.
CLEVELAND

The Michigan State Department of Health made a survey of representative sections of the state in 1923 to determine (1) the incidence of goiter among school children and (2) the amount of iodine in the water supply of each section. Naturally the amount of iodine in the water supply is the best index to the food iodine found in that section. Early in 1924 a program of goiter prevention was outlined. This original program emphasized the importance of a complete resurvey of the same areas in ten years.

The results of the first survey showed beyond a doubt that there is a correlation between a scarcity of food iodine and a high incidence of simple goiter. These data are given here only graphically to recall the areas examined, the incidence of goiter and the amount of iodine in the water supply (fig. 1). From this study it is apparent that the incidence of goiter in any county is inversely proportional to the iodine content of the water supply.

Immediately following this survey a state-wide campaign by the state department of health was made to emphasize the fundamental causes of endemic goiter and the principles of its prevention. In the spring of 1924 a special committee was appointed by the state medical society to work with the state department of health in carrying out this work. These two groups, representing the medical profession of the state, cooperated with the Wholesale Grocers' Association and the Salt Manufacturers' Association to the effect that, beginning May 1, 1924, the salt manufacturers produced and put on the market throughout Michigan an iodized salt containing one part of potassium iodide to 5,000 parts of salt. The wholesale grocers did everything they could to bring about the sale of this salt only, and the state department of health was responsible for advising the public to use it.

The fact should be reemphasized that there was no law compelling people to use iodized salt—only education and advice in the form of news articles throughout the state, health talks to school children and parents and placards to be used in the schools as in any other health program. All this information and advice was given by the state department of health and the state medical society.

The Ohio State Department of Health in 1925 made a rather comprehensive study of the incidence of goiter throughout the state and planned to support the general use of iodized salt. Six counties were selected as representative of average conditions in Ohio, and during October and November approximately 60,000 school children were examined for goiter. The results of this survey were never published and, because of active opposition to this method of prophylaxis by some of the leading goiter surgeons, the state department immediately withdrew its support and has since shown no active interest in this public health measure.

The study outlined by the Michigan State Department of Health in 1928 again had two objectives: (1) the efficiency of the method of prevention (the general use of iodized salt) and (2) the safety of this so-called indiscriminate use of iodine. The second objective was necessary because of published reports of cases of hyperthyroidism due to the use of iodized salt. To answer this question with scientific data we arranged for a comprehensive study of all adults with goiter in three counties. This study was made by the local medical society with the cooperation of the state department of health. The summary of the results of prevention given in figure 2 shows a marked decrease in goiter in every section. Also the conclusion as to the possibility of harm by the general use of iodized salt was equally definite. We studied 1,229 adults with goiter or patients who had recently been operated on for a toxic goiter in the three counties. Of 655 who had used iodized salt continuously for four years, twenty-seven, or 4.1 per cent, developed symptoms of toxic goiter after using iodized salt. There were 419 who had purposely avoided iodized salt and of this number 233, or 55.5 per cent, developed toxic goiter. After four years of the general use of iodized salt we found it an efficient as well as a safe method of prevention.

McClure [1] found a gradual decrease in the number of goiter operations throughout the state from 1926 to 1932. This decrease was very noticeable, yet there was a gradual yearly increase in the total number of operations.

For practical reasons the ten year resurvey in Michigan could not be made in 1934 but was made in 1935. In order to make our results comparable with the results in 1924 the committee for the prevention of goiter arranged for me to make this survey with the assistance of three physicians from the state department of health and one from the University of Michigan. The goiter committee is composed of two men from the state medical society, two from the state department of health and one from the state university.

1. McClure, R. D.: Thyroid Surgery as Affected by the Generalized Use of Iodized Salt in an Endemic Goiter Region, Ann. Surg. **100**: 924 (Nov.) 1934.

The physicians who assisted me in this survey were Drs. M. B. Beckett, A. W. Newitt and F. C. Forsbeck from the state department of health and Dr. H. S. Towsley from the division of pediatrics, University of Michigan Medical School. All readily adapted themselves to the same classification and method of examination that was used in the previous examination in

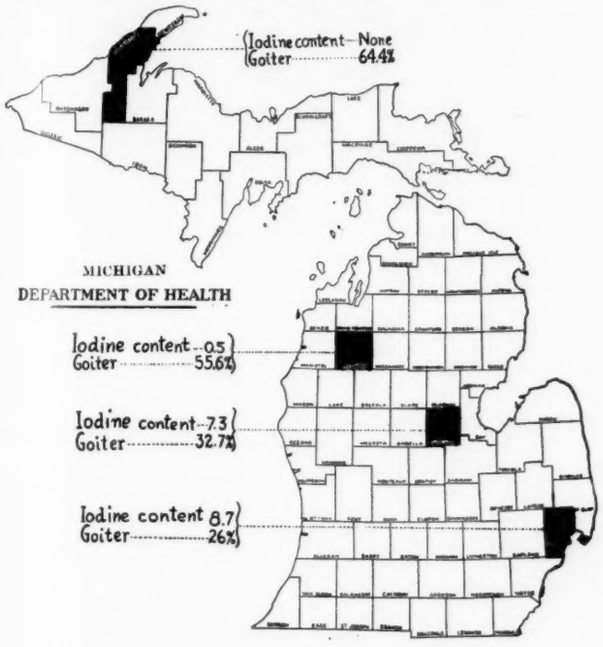

Chart 1.—Goiter survey of school population: Iodine in water estimated in parts per billion.

Michigan and was also the method used in the original survey in Akron. In every case we made a manual examination of the neck, palpating each lobe of the thyroid, estimating the size, and feeling the consistency and the presence or absence of nodules or persistent thyroglossal stalk.

The classification of goiter must begin with an appraisal of the normal thyroid. At the beginning of our study in Akron in 1916 Marine's standard of anatomically normal thyroid was one that does not exceed 0.5 Gm. of thyroid per kilogram of body weight. In an average size adult a strictly normal thyroid would average from 20 to 35 Gm. Correspondingly an adolescent child would have a thyroid weight of from 15 to 30 Gm. Further, Marine estimated that each lateral lobe is approximately the size of a medium sized lima bean, while the isthmus can barely be palpated. We stated in our first report [2] of this study (1917) that the lateral lobes, if normal, could not be palpated. By 1924 our knoweldge and technic had improved to a point at which we taught the physicians who assisted with the survey in Michigan to palpate the lateral lobes in each case and to think in terms of consistency as well as of size. If distinct enlargement of one or both lateral lobes can be palpated, i. e., two or three times normal, and a change in consistency, soft or spongy, it is called a small goiter. If beyond a doubt this enlargement cannot be felt, the thyroid is called normal. The small goiter includes everything from a distinct enlargement to a visible goiter in which one or both lateral lobes cause a definite bulging of neck and the median lobe is easily apparent; i. e., from one-half to one inch (from 1.27 to 2.54 cm.) in thickness. In such a goiter there may be as much as ten times the amount of a normal gland. If the enlargement is deforming, i. e., considerable bulging of one or both lateral lobes, it is called a moderate goiter. This moderate goiter included all average sized goiters. Only the exceptionally large deforming thyroid is called large goiter. Thus we had originally the following classifications: (1) normal, (2) small goiter, (3) moderate goiter and (4) large goiter. In all the surveys in Michigan we used only the numerals 1, 2, 3 and 4, but the meaning is exactly the same as the original classification.

The survey had three main objectives: (1) incidence of goiter in relation to the use of iodized salt, (2) the safety of the continued use of iodized salt and (3) the accuracy and dependability of this method of replacing food iodine. Therefore it was necessary to know in each case whether or not they were using iodized salt. To this end blank cards were sent to the school several days preceding the examination so that this information could be given with some assurance of accuracy. From our experience, however, these data can be procured with accuracy only when directed by public health nurses.

It was obvious from the start that our data would naturally fall into three groups: (1) those using iodized salt regularly for years, (2) those not using iodized salt at all and (3) all those in which the information is too indefinite to be classified with either group 1 or 2 and grouped under the heading indefinite. We frequently encountered such conditions as "Used iodized salt regularly from 1924 to 1930, but none since" or "We have used iodized salt regularly for the past three years, but none before that." In the reexamination of

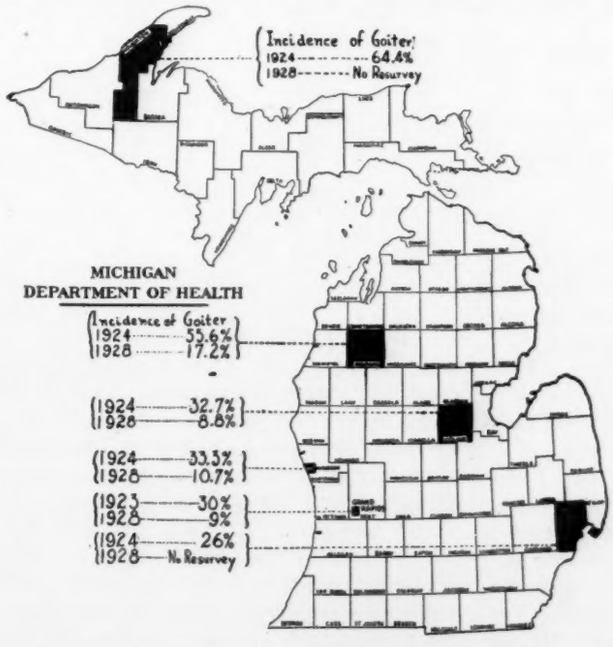

Chart 2.—Goiter survey in 1923 and 1924: School children examined, 65,537; incidence of goiter, 38.6 per cent. In 1928, school children examined, 50,134; incidence of goiter, 9.9 per cent.

1928 and in the yearly examination of school children in Detroit and Grand Rapids we found a most striking decrease in goiter during the first four years. Therefore, if a child stated that he had used iodized salt regularly for three years or more he was classed as using iodized salt, and if he had not used it for three years he was classed as not using iodized salt.

2. Marine, David, and Kimball, O. P.: The Prevention of Simple Goiter in Man, J. Lab. & Clin. Med. **3**: 40-48 (Oct.) 1917.

Each of the four counties and the city of Grand Rapids was tabulated separately. To show our classification and extent of information obtained, table 1 gives the completed summary of Houghton County.

The whole survey is shown in table 2, in which only the incidence of goiter in relation to prophylaxis is shown.

Among the group not using iodized salt it will be noted that the incidence of goiter is less than half of what it was in 1924. Much of this decrease is due to the use of iodized salt before 1930. Another important factor has been the frequent reports from the state department of health urging prophylaxis. Many were taking iodine in some form from their physician or buying the chocolate iodine tablets formerly used in Grand Rapids and other city schools. But in every county or city of both Michigan and Ohio in which the study has been made the percentage of goiter among those using iodized salt is only a fraction of what it is among those not using it. A valuable study was possible in the comparison of two cities, Houghton and Calumet, in Houghton County, only 30 miles apart. All natural factors determining goiter would be the same. Dr. Newitt and I examined all the children of the junior high and high school in Houghton on one day and the same age group of the junior high and high school at Calumet the next day. The results are given in tables 3 and 4.

The difference in these communities responsible for this marked increase in goiter in Calumet lies in the fact that Calumet is a mining town, and during 1932 the copper mines closed. Approximately two thirds of the families were on relief and only bag salt (non-iodized) was given to relief families. Further, families who were buying their groceries were so constrained by finances that they too bought bag salt, which is cheaper than package salt. Therefore the use of iodized salt was discontinued in about two thirds of the homes in Calumet during 1933, 1934 and 1935. The increase in the number of goiters, and especially moderately enlarged, hyperplastic goiters, was most striking. In a period of three years, with the only source of food iodine closed to half of the homes, endemic goiter is proportionately as prevalent as it was before prevention was initiated.

To demonstrate what can be done by any county or locality in the control of endemic goiter I give here the results in Midland County, Mich., and call attention to the factors that count most in the success of this public health measure: First, this county supports an efficient county health department which has consistently urged the continued use of iodized salt. Also, their assistance in obtaining accurate information regarding the use of iodized salt during this survey makes the data from this county much more valuable.

TABLE 1.—*Houghton County—Michigan, 1935*

	Total	Normal	Small Goiter	Moderate Goiter	Cong. ad.* or ad.	Hyperplastic Goiter	Total Goiter	Per Cent Goiter
Using iodized salt.....	4,370	4,034	334	2	12	40	336	7.5
Not using iodized salt...	1,742	942	770	30	30	304	800	45.9
Indefinite.....	2,775	2,512	260	3	5	51	263	9.5
Total.....	8,887	7,488	1,364	35	47	395	1,399	15.75

* Adenoma of the thyroid is a distinct nodular mass in one lobe. If associated with a persistent thyroglossal stalk it is called congenital adenoma.

TABLE 2.—*Goiter Survey—Michigan, 1935*

	Totals	Goiter	Per Cent Goiter
Used iodized salt regularly.....	47,360	1,363	2.88
Never used iodized salt.....	9,429	1,839	19.29
Use of iodized salt indefinite.....	5,778	316	5.47
	61,649	3,518	8.2

TABLE 3.—*Houghton County, Michigan—Houghton High School*

	Total	Normal	Total Goiter	Per Cent Goiter
Using iodized salt.....	305	285	20	6.55
Not using iodized salt.....	108	80	28	26.00
Indefinite.....	16	12	4	25.00
	429	377	52	12.12

TABLE 4.—*Houghton County, Michigan—Calumet High School*

	Total	Normal	Total Goiter	Per Cent Goiter
Using iodized salt.....	488	400	88	10.00
Not using iodized salt.....	350	199	151	43.14
Indefinite.....	43	29	14	32.55
	881	628	253	28.72

TABLE 5.—*Midland County—Michigan, 1935*

	Total	Normal	Total Goiter	Per Cent Goiter
Using iodized salt.....	3,089	3,031	58	1.9
Not using iodized salt.....	1,184	1,009	175	14.52
Indefinite.....	618	593	25	4.00
	4,891	4,633	258	5.28

TABLE 6.—*Division of Health, Cleveland: Goiter Survey—January 1936*

	Total	Normal No. 1	Small Goiter No. 2	Moderate Goiter No. 3	Cong. ad.	Hyperplastic Goiter	Per Cent Goiter
Using iodized salt.....	2,703	2,503	199	1	35	14	7.7
Not using iodized salt.....	2,529	1,752	757	20	48	208	30.7
Indefinite.....	761	624	136	1	15	22	18.00
	5,993	4,879	1,092	22	99	244	18.00

From this survey we find that: 45.1 per cent of children use iodized salt regularly, 42.2 per cent of children never used iodized salt, 12.7 per cent of children use iodized salt irregularly—only part-time or occasionally (classified as indefinite users).

Because of the scientific interest in this health measure the iodized salt has been frequently analyzed and recommendations have been made to the effect that only reliable grades of iodized salt be used. The incidence of goiter in this county was 32.7 per cent in 1924.

Approximately 63 per cent of the homes are now using only iodized salt. It is thought that previous to 1932 more than 90 per cent of the homes were using only iodized salt. In table 5 the group not using iodized salt shows only 14.5 per cent goiter compared to 32.7 per cent in 1924. This reduction undoubtedly

is due to the continued use of iodized salt from 1924 to 1932. In the original survey one third of the children of this county showed a well developed goiter, and a questionable enlargement was seen in almost every child. We now find an anatomically normal thyroid in 90 per cent; i. e., the theoretically normal thyroid that twenty years ago Marine said could be found only along the sea coast. Also in these schools we examined children of five families, all of whom stated that they had

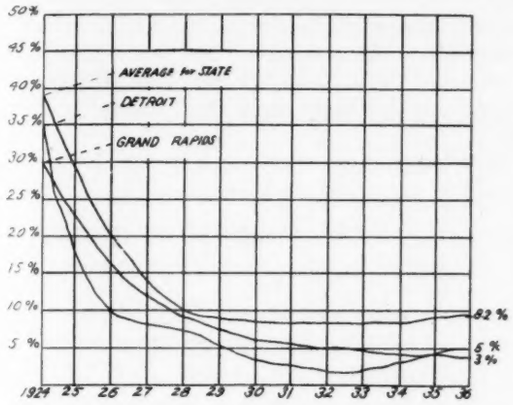

Chart 3.—Incidence of goiter in Michigan from 1924 to 1936.

purposely avoided iodized salt for years (from three to six) on the advice of their physician. On questioning we found that all five families had been advised by a dermatologist of Saginaw, who gave the advice on the theory that iodized salt caused acne vulgaris. Among these children there were eight cases of moderately enlarged, soft, spongy hyperplastic goiters, demonstrating as nothing else could the value of iodized salt in the prevention of goiter.

Not one case of acne was found among the children of these five families, nor did we find more cases of acne than would be expected among the 3,000 children using iodized salt regularly for years. But the important fact is that of these 3,000 children less than 2 per cent had goiter.

In January 1936 a goiter survey was made in Cleveland. This survey was made by the school health service of the city health department through the parochial schools. Here again there were two objectives: (1) the incidence of goiter and (2) the use of iodized salt. To make our data as accurate as possible, the school health nurse went into each schoolroom several days in advance of the examination, explaining the importance of this study, and arranged for each child to take home a blank card bearing his name and the questions on the use of iodized salt. This blank was to be filled out by the parent. The information was then transferred to his goiter card, on which our examination was recorded. The examinations were made by Drs. Sloan, Jackson, Larsen, Hutchison and Kimball. The examination and classification was the same as is described for the Michigan survey. The fifteen school districts were selected by the school health service as representative of average conditions in Cleveland. Table 6 gives the result of this survey.

A similar study made by me for the city health department through the parochial schools of Cleveland in 1924 showed 30 per cent goiter among school children (all grades, boys and girls). Today, as shown by data in table 6, among those not using iodized salt the incidence of goiter is still 30.7 per cent. This is the answer to any one who thinks that the incidence of endemic goiter goes in waves; i. e., in 1924 we were at the peak of the wave due to natural causes and by 1935 we were at the low ebb of natural causes. Our results show that we are still at the 1924 peak for those not using any prophylactic iodine.

The actual changes that have taken place in Michigan and Ohio since 1924 can best be shown graphically. The incidence of goiter throughout Michigan was 38.6 per cent in 1924 and 9.9 per cent in 1928 and 8.2 per cent in 1935.

The true condition of Cleveland is strikingly shown in figure 4. The group not using iodized salt shows no change, while the group using iodized salt shows a decrease from 31 per cent to 7.7 per cent. In each county or city in Michigan the group listed as not using iodized salt showed some reduction in goiter over the 1924 survey. In some instances it is less than half. We can attribute this to the fact that a very high percentage of the homes used only iodized salt from 1924 to 1930, but many have used only bag salt (noniodized) since the depression. They were listed with those not using iodized salt because we had arbitrarily set three years as the limit for using or not using, but its use for the preceding years had a very definite effect. We cannot accurately evaluate this effect, so we stress only the percentage of goiter at present, which shows the entire reduction.

In Cleveland we had an entirely different situation. There was a great difference of opinion in the medical profession and consequently a distinct division of thought and advice was given the public. Our survey this year showed that 87.3 per cent of the homes had definitely decided either for or against iodized salt. The group of nonusers had purposely avoided it since it came on the market in 1925, for it was then that they were so strongly advised against its dangers. Also that was the time when the state and city departments of health urged the general use of iodized salt throughout this endemic goiter district. This definite stand for or against the use of iodized salt has accidentally pro-

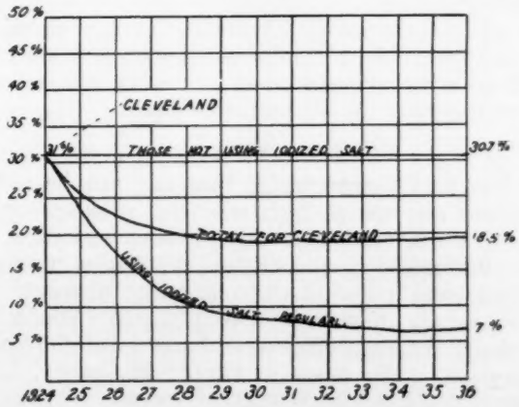

Chart 4.—Incidence of goiter in Cleveland from 1924 to 1936.

vided here in Cleveland indisputable data that should establish definitely the value and future of this method of prevention.

In Cleveland we did not find any case of clinical hyperthyroidism among the 6,000 children examined. In Michigan, among 9,429 children not using iodized salt, we found four with moderately sized nodular hyperplastic goiters with very definite clinical signs of toxicity. Three of these stated that they had never used iodized salt and the fourth stated he had used only

bag salt since the depression. No case of hyperthyroidism was found among 47,360 children using iodized salt regularly.

In Cleveland among the group using iodized salt regularly 7.7 per cent had goiter and fourteen of these had large hyperplastic iodine deficiency goiters. Contrast this with Midland County, Mich., where the incidence of goiter was much higher than in Cleveland in 1924, but in 1935 among those using iodized salt regularly less than 2 per cent had goiter. The condition in Cleveland is due to two salt manufacturers in this district who could not make up their minds on the value of this method of goiter prevention and consequently put little or no iodine in their iodized salt.

The Cleveland Health Department in 1931 made an analysis of the various brands of iodized salt being sold in the community and found three different brands which contained no iodine, although each was labeled iodized salt (0.023 per cent of potassium iodide). The two companies responsible for this condition agreed to make their product conform to the label. On repeated analysis in 1936 of the various brands of iodized salt sold in Cleveland, we found several brands of iodized salt that contained only one-third the amount of iodine stated on the label and one brand sold by a large chain store which contains no iodine. The same two manufacturers in the Cleveland district are responsible. Again I want to state that all the nationally advertised brands contain iodine exactly as stated on the label. However, the average of thirteen brands for Cleveland was only 0.012 per cent, or half of what was stated on the package.

The laboratories of the Michigan State Department of Health found an average for thirteen brands sold in Michigan to be 0.018 per cent. All advertised 0.023 per cent potassium iodide or 0.02 per cent sodium iodide.

The Wisconsin State Department of Health analyzed thirteen brands sold in Wisconsin and found an average of 0.014 per cent, yet all were labeled 0.023 per cent or 0.02 per cent, depending on the use of potassium or sodium iodide.

In each study we found the iodine content of the nationally advertised brands and the trade brands prepared by these manufacturers for other companies to approach closely the amount advertised.

SUMMARY

It has been demonstrated that salt can be iodized accurately and that a high standard of efficiency can be maintained. It has proved the least expensive and most satisfactory of any method yet devised to supply deficient food iodine in endemic goiter districts.

This survey shows conclusively that the general use of iodized salt is an efficient and safe method of goiter prophylaxis. The study in Houghton County, Mich., shows that the discontinuance of iodized salt was followed by a marked increase in the incidence of goiter within three years.

Every state in which goiter is endemic is advised to meet the deficiency of food iodine by the general use of iodized salt. From our experience it is advisable to have the state health department laboratory analyze every brand of iodized salt every other year, at least, and insist on a high standard. An accurate stable product can and should be maintained. It is also very necessary that the department of health continue its advice on goiter prophylaxis at definite intervals. Otherwise, interest in this measure will die because of the ease and simplicity of prevention. Attempts to interest and educate the public need not be aimed solely at the deformity of the neck. One should think of the number of cases of feeblemindedness (cretinoid type), the many boys and girls who do not mature normally through puberty (clinical hypothyroidism), the many cases of cretinism and myxedema and the thousands of large tumorous goiters with an occasional cancer, each of which is only a sequela of endemic goiter.

For over twenty years Marine and I have consistently emphasized the importance of the replacement of the food element iodine. In meeting this deficiency we are preventing infinitely more than meets the eye, the goiter.

Hanna Building.

THE PREOPERATIVE VISUALIZATION OF BREAST TUMORS

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R. RUSSELL BEST, M.D.
CHARLES F. MOON, M.D.
AND
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OMAHA

Tumors of the breast can be visualized in situ by contrast roentgenographic studies. The offending neoplasms are rendered visible by outlining them with such contrast mediums as stabilized thorium dioxide sol, lipoiodine and air. This can be accomplished in one of two ways. The first method consists of injecting the milk ducts with the radiopaque substance and then making stereoscopic studies. The resulting roentgenograms, descriptively called mammograms, give an accurate anatomic pattern of the injected ductal system. Any pathologic condition that alters the size, shape or conformation of the lactiferous ducts is readily appreciated. Similar visualization studies can be made by inflating the breast tissues with air. This second form of study has been termed aeromammography. The technical simplicity and the diagnostic value of such visualizations are vividly portrayed in the cases reported here.

BILATERAL BREAST PAPILLOMAS

CASE 1.—Miss R. S., aged 41, complained of a bleeding breast. During the past three years she had intermittently observed two or three drops of a serosanguineous discharge escaping from the right nipple. Thinking that such secretions were always associated with the menopause, she dismissed the events as being unimportant. Two weeks before admission, however, she became alarmed, for a persistent hemorrhagic discharge seeped from the same nipple. Frequent examinations by herself and her physicians failed to locate the offending tumor. There had been no associated pain and she stated that there was no possibility of trauma being the exciting cause. The left breast seemed to be normal.

Both breasts were small and presented nulliparous characteristics. In the outer lower quadrant of the right breast was a small compressible tumor, which seemed to be confluent with the dilated milk ducts. Whenever pressure was applied to this cystic growth the regional ducts that led from the affected lobule became tense and distended, but no secretion could be expressed from the nipple. While the upper medial quadrant of the same breast was palpated, three drops of bright red blood were expressed from one gaping estuary. Painstaking palpation, transillumination and soft tissue roentgenograms did not demonstrate the offending tumor. The small cystic growth

From the Bishop Clarkson Memorial Hospital.

in the lower portion of the breast did, however, transmit light, but no other abnormalities were noted. The left breast was apparently normal.

It was appreciated that the right breast harbored a bleeding neoplasm and attempts were made to locate the tumor by means of contrast mammographic studies. The dilated milk duct, from which the hemorrhagic fluid escaped, was cannulized with a blunt No. 25 gage needle and was injected with 1 cc. of stabilized thorium dioxide sol. The resulting roentgenogram clearly outlined the course of the milk duct and demonstrated a definite filling defect, which protruded into and completely filled the ductal lumen (fig. 1*A*). Apparently this filling defect was caused by a proliferating tumor arising from the walls of the milk duct. To exclude the possibility of this negative shadow being an artefact, such as an air bubble, a second mammogram was taken after an additional 3 cc. of stabilized thorium dioxide sol had been introduced into the same duct. The contrast fluid passed beyond the obstructing tumor and filled the terminal lacteals and acini. Not only was the first tumor still visible but a second and similar neoplastic mass was observed at the bifurcation of one of the smaller communicating ducts (fig. 1*B*). Thus two papillomas were definitely localized by these visualization studies.

In an attempt to understand these roentgenologic changes better and in order to have a normal breast pattern for comparison, four lactiferous ducts of the left nipple were cannulized and injected with stabilized thorium dioxide sol. The stereoscopic mammograms presented a startling and completely unexpected condition. The injected segment of the breast matrix was found to contain a large cyst, which was formed by the confluence of several adjacent ducts. The delimiting wall of the cyst was clearly seen, but its central portion was not distended with the thorium dioxide sol, as there seemed to be a moderate sized filling defect present (fig. 3). Repeated mammograms indicated that this negative shadow maintained a constant size, shape and position; therefore it was interpreted as being a pedunculated papilloma arising from the cyst wall.

Appreciation of the tendency of papillomatous neoplasms to undergo malignant transformation, combined with the fact

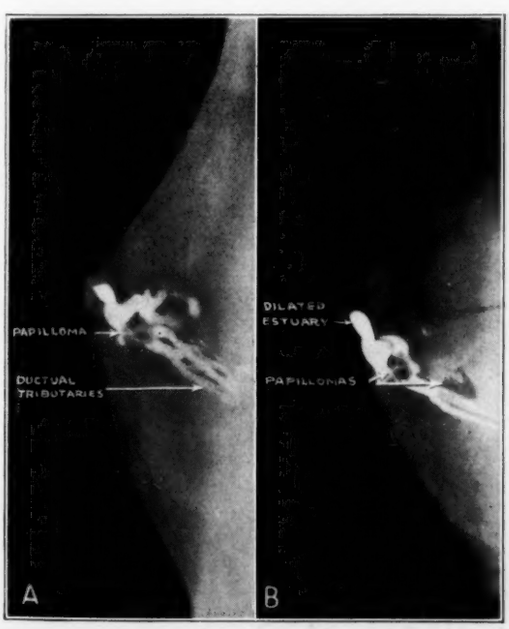

Fig. 1 (case 1).—*A*, the bleeding duct was injected with 1 cc. of stabilized thorium dioxide sol. The mammogram evidenced a filling defect, which was interpreted as a papilloma protruding into the ductal lumen. *B*, the same duct was injected with an additional 3 cc. of stablized thorium dioxide sol. The entire duct and its tributaries were visualized and two filling defects were seen, indicating multiple papillomas.

that these tumors were bilateral, caused Dr. Moon to remove both breasts. Examination of the excised specimens verified the mammographic studies. The right breast contained a large dilated duct which harbored two bleeding papillomas (fig. 2). The tumors were too small to be detected by palpation or to cast a dark shadow on transillumination. In the asymptomatic left breast several dilated ducts had fused so as to form a cyst, and arising from its wall was a friable, nonbleeding pedunculated papilloma (fig. 4).

This particular case presents several interesting features. First, it emphasizes the fact that papillomatous tumors are often multiple and that they may arise in any segment of the lactiferous ducts. Second, it clearly

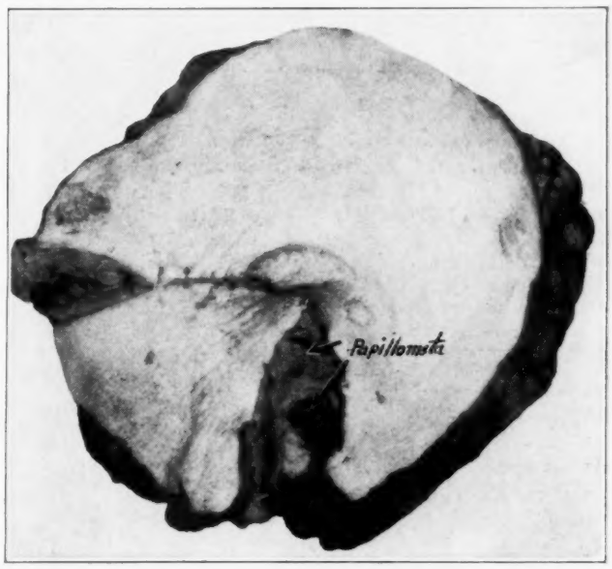

Fig. 2 (case 1).—Excised breast, showing dilated duct containing two papillomas

demonstrates that a simple excision of one tumor is not curative, for similar growths may be developing in other portions of the same breast. Third, it proves that papillomas may simultaneously involve the two breasts and that the absence of symptoms and physical signs is no assurance that such tumors are not present. Fourth, the multiplicity of these neoplasms lends credence to the belief that they may have a certain constitutional or endocrinologic background. Fifth, it most emphatically demonstrates the clinical value of mammographic studies in the diagnosis of breast neoplasms. The mammograms not only locate the offending tumors but also determine the degree of involvement. Such information is valuable, as it assists the surgeon in selecting the proper therapeutic procedure.

LIPOMA OF THE BREAST

CASE 2.—Mrs. M. F., aged 21, a housewife, was worried about a lump in her breast. Two months before admission while bathing, she accidentally discovered a small asymptomatic tumor in the right breast. About this time she became pregnant and both breasts began to enlarge. The neoplasm, however, grew very rapidly, for during the past two weeks it had more than doubled its original size and now interfered with the free motion of her arm. She had never observed a discharge from the nipple nor had the breast been subjected to trauma. Her physician interpreted this history and his observations as signifying a rapidly growing carcinoma which was being activated by an early pregnancy.

The right breast was twice as large as the left and in the upper half there was a large bulging tumor mass. It was firm, slightly tender and partially fixed, for it blended insensibly into the adjacent breast matrix. The overlying skin was tense and apparently attached to the tumor, but one could not determine whether the fixation was caused by an actual cellular infiltration or by contact pressure with the neoplasm. The tumor mass was not adherent to the pectoral muscles, for a layer of normal breast tissue seemed to separate the two. The nipple was partially inverted and, as no secretion could be

expressed, the orifices of the milk ducts could not be located. The neoplastic mass transmitted light with the same facility as did the normal breast tissues; hence no differentiation was possible. Soft tissue roentgenograms likewise failed to locate or identify the tumor (fig. 5 *A*).

In order to obtain some information concerning the nature of this new growth a No. 20 gage needle was plunged directly into the neoplastic mass. Considerable resistance was encountered, as if the needle was traversing a firm fibrous tumor, for neither cells nor fluid could be aspirated. Apparently this was a connective tissue tumor, the exact nature of which was not clearly understood. The transillumination test seemed to rule out a simple fibro-adenoma, for they are not translucent while this tumor was. The firm resistance imparted to the exploring needle seemed to preclude the possibility of this being a lipoma, for lipomas are not composed of connective tissue. All precision tests such as transillumination, palpation and soft tissue roentgenograms had failed to give sufficient information for the identification of this neoplasm.

It was felt that mammographic visualization might yield additional information concerning the nature of this puzzling tumor. Attempts, however, to introduce stabilized thorium dioxide sol into the milk ducts failed, for the small estuaries could not be located. Hence, the insufflation of air offered the only hope of visualizing the neoplasm.

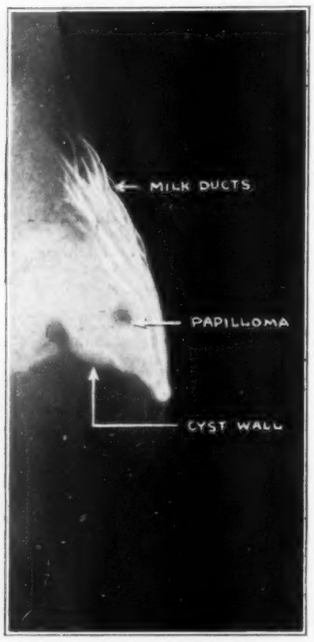

Fig. 3 (case 1).—One segment of the normal left breast was injected with stabilized thorium dioxide sol. Observe the small ramifying ducts, the large cyst and the negative shadow in the center of the cyst, which was interpreted as being a papilloma.

The mammary gland was thoroughly cleansed with merthiolate and a No. 20 gage needle was inserted into the retromammary space and 500 cc. of filtered air was slowly introduced. The injected air gradually separated the breast from the pectoral muscles and elevated the gland from the chest wall. The needle was withdrawn and reinserted into the subcutaneous tissues directly overlying the tumor mass, and an additional 265 cc. of air was injected through this portal. The inflated emphysematous breast was about five times larger than its uninjected mate.

A stereoscopic roentgenogram produced a beautiful silhouette of the breast. The injected air had completely surrounded the mammary tissue, thus separating it from the skin and pectoral muscles. The air had also dissected its wall along the capsule of the offending tumor, thus separating the neoplastic mass from its bed of compressed breast matrix (fig. 5 *B*). Because it was a translucent encapsulated tumor, Dr. Harris made the roentgenologic diagnosis of a lipofibroma. A large encapsulated bilobular fatty tumor was removed from the breast. The enucleation was accomplished with ease, for the air had already separated the tumor from its glandular bed. The lipoma measured 3 inches (7.5 cm.) in thickness and was 4 inches (10 cm.) long. It was composed of fatty tissue held together by a loose connective tissue stroma. Apparently the fibrous matrix was responsible for the resistance encountered by the exploring needle.

The patient made an uneventful convalescence and the emphysema completely disappeared during the next six days.

In this particular case the single aeromammogram vividly portrayed the characteristics of this supposedly malignant tumor and identified it as a benign lipofibroma. Similar experiences have taught us that insufflations of air are valuable in facilitating the diagnosis of breast tumors, particularly lipomas, fibro-adenomas, simple retention cysts and carcinomas. Aeromammograms, however, have definite limitations, for they do not visualize small papillomas, early carcinomas, small

Fig. 4 (case 1).—The cystic cavity and the proliferating papilloma, confirming the mammogram.

retention cysts or cystic dilatation of the milk ducts. In order to visualize such tumors, the lactiferous ducts must be injected with some contrast medium. The combination of the ductal injection and the insufflation of air is ideal, for it permits a complete visualization of all the structures of the breast.

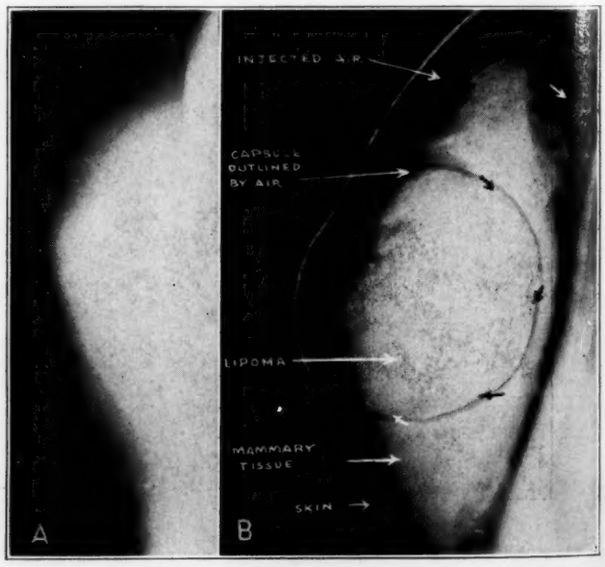

Fig. 5 (case 2).—*A*, soft tissue roentgenogram of right breast, failing to outline or define the offending neoplasm. *B*, the breast was inflated with 765 cc. of air. The air separated the breast matrix from the skin, the pectoral muscles and the neoplastic mass. The air dissected along the capsule of the tumor, thus outlining the lipoma.

These two cases are typical of many others which we have studied by contrast mammograms. Detailed discussions of technic, interpretations, limitations and indications for mammography have been reported else-

where.[1] A personal experience (N. F. H.) with more than 320 contrast mammograms testifies that they are invaluable in the diagnosis and recognition of mammary neoplasms.

CONCLUSIONS

1. Tumors of the breast can be visualized by contrast roentgenograms made by introducing radiopaque substances into the milk ducts or by inflating the breast tissues with air.

2. Tumors arising within or communicating with the milk ducts are best visualized by introducing stabilized thorium dioxide sol into the diseased ducts. The stereoscopic mammograms locate the tumor and portray its identifying characteristics.

3. Tumors arising in the periductal tissue or those having no communication with the milk ducts can be visualized by inflating the breast with air. A large encapsulated lipoma was visualized by this method.

4. A combination of the ductal injection and the insufflation of air produces the most satisfactory visualization patterns of the structures of the breast.

5. Lipoma, fibro-adenoma, simple retention cysts, cystic degeneration of the ducts and carcinoma are some of the tumors that have been visualized preoperatively and correctly diagnosed.

527 Medical Arts Building.

AN EVALUATION OF THE ROENTGEN DIAGNOSIS OF EARLY CARCINOMA OF THE BREAST

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An accurate roentgen diagnosis of any breast lesion based on recognition of morbid anatomic change presumes familiarity with the normal anatomic roentgen appearances. In a recent report of the normal breast we [1] indicated some limitations of the roentgen examination in such borderline pathologic states as mazoplasia, cystiphorous desquamative epithelial hyperplasia, epitheliosis and adenosis. Since the roentgenologist can attain little more accuracy than the pathologist, if limited to a macroscopic examination in making conclusive diagnoses of breast lesions, claims made for the roentgen studies inferring accuracy akin to the pathologist's microscopic studies must be carefully analyzed. This is well exemplified in those cases of fibro-adenomas of the puberal period when clinically, roentgenographically and macroscopically a diagnosis of neoplasia is agreed on only to be controverted by the microscopic finding of simple hyperplasia.[2] While it is difficult to credit some of the recent enthusiastic reports on the roentgen examination of the breast which seem almost tantamount to histologic studies, the high percentage of roentgen interpretations that were confirmed by microscopic examination of the tissue [3] is remarkable.

1. Hicken, N. F.: Mammography: The Roentgenographic Diagnosis of Breast Tumors, Surg., Gynec. & Obst., to be published; The Radiographic Visualization and Diagnosis of Breast Tumors Following Air Insufflation, Ann. Surg., to be published.

The authors acknowledge the assistance and facilities given by Dr. Albert Strickler, medical director of the Skin and Cancer Hospital, where many of the examinations were done.

1. Gershon-Cohen, Jacob, and Strickler, Albert: The Roentgenologic Examination of the Normal Breast, Am. J. Roentgenol., to be published.

2. Dawson, E. K.: A Histological Study of the Normal Mamma in Relation to Tumor Growth: I. Early Development to Maturity, Edinburgh M. J. **41**: 653 (Dec.) 1934.

3. Lockwood, I. H.: The Roentgen-Ray Evaluation of Breast Symptoms, Am. J. Roentgenol. **29**: 145-155 (Feb.) 1933.

ROENTGEN CRITERIA FOR MALIGNANT CONDITIONS OF THE BREAST

When we speak of any method for the detection of early neoplastic changes, it might be well to make clear first when neoplastic changes are early. The pathologist regards malignancy as early when he discovers microscopic invasion of any proliferating group of cells or tissue beyond normal bounds. But it is very likely that cells are malignant before this invasion occurs, and some pathologists endeavor to diagnose malignancy on the morphologic changes they observe in the cell itself while still within its normal confines. Certainly with the present limitations of knowledge of the diagnostic applications of the roentgen rays a diagnosis of malignancy at this early stage seems ludicrously hopeless. However, if malignancy were regarded in most instances as simply a later stage in the evolution of neoplasia, the beginning of which is always benign, like tumors of the type classified as adenoma, fibro-adenoma and papilloma, the problem would be relatively simple. There are some good reasons to look on this idea as tenable. The occurrence of malignancy in about 20 per cent of cases of Schimmelbusch's disease is an example in point. This disease begins with what Cheatle [4] regards as a desquamative epithelial hyperplasia with cyst formation, usually occurring in the late twenties and early thirties. In the next stage, usually in the late thirties and the forties, a radical neoplastic change takes place in the biology of epithelial growth, although the cells remain within normal but distended boundaries. Papillomas are conspicuously present at this stage, and the earliest neoplastic changes that can be recognized by the pathologist occur at this time. Cheatle has seen all three stages of transition in breasts at this period, and he logically remarks on the similarity of these changes with the development of tar carcinoma in mice. The dermatologist and gynecologist are also acquainted with the transition of benign leukoplakia, warts and papillomas into malignant processes. The diagnosis, there-

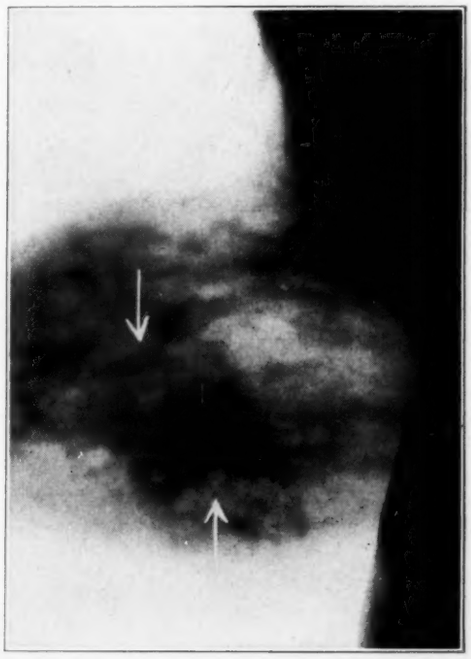

Fig. 1.—The neoplasm in this breast was regarded as malignant because of the spreading irregular margins.

4. Cheatle, G. L., and Cutler, Max: Tumors of the Breast, Philadelphia, J. B. Lippincott Company, 1931.

fore, of an early malignant growth by roentgen examination must first take into consideration the point at which "early malignancy" is to be placed. If the presence of the first neoplastic cells beyond normal limits, a condition often ascertained with difficulty even with the aid of the microscope and in the hands of the most experienced pathologist, is to be regarded as the

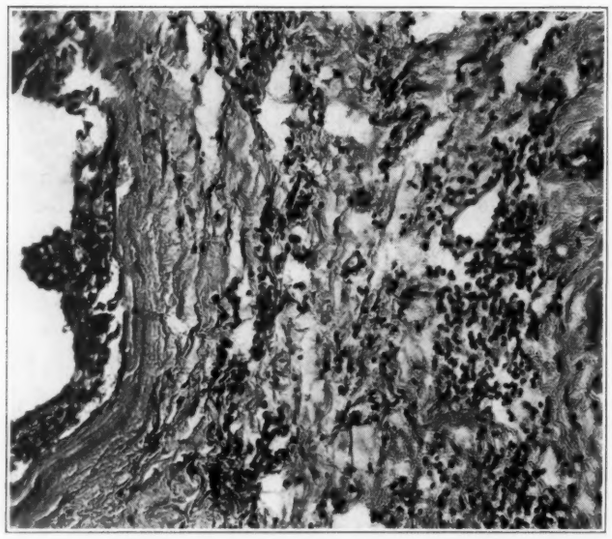

Fig. 2.—A diagnosis of chronic cystic mastitis was made from the sections of the breast in figure 1 because the main tumor mass was excised and withheld from the pathologist so that another area of malignant involvement was difficult to find macroscopically. The patient subsequently died with widespread metastatic malignant lesions.

"critical" point for establishing the earliest diagnosis of malignancy, then the use of the roentgen rays is futile at this stage. But if one proceeds with open eyes, there are other grounds for enthusiastic consideration of the roentgen examination. Its continued application seems warranted, especially in the large clinics where there is much material and where close cooperation among clinician, surgeon, pathologist and roentgenologist can be arranged.

We have had the opportunity to obtain the opinion of an expert pathologist [5] who studied sections of amputated breasts from forty-one patients in our private practice and from the tumor clinic of the Skin and Cancer Hospital. This material is naturally too meager on which to base statistical conclusions but does furnish some revealing data. The fact that the percentage of correct preoperative roentgen interpretations was higher than that made by the pathologist when limited to his macroscopic studies, but lower than that made after his histologic examinations, is in itself very encouraging. This feeling is further enhanced by recalling cases in which the roentgen diagnosis was the single cause for revision of the pathologic report, the initial disagreement between the roentgenologist's and the pathologist's observations leading to further histologic study resulting in correction of the diagnosis.

REPORT OF CASES

CASE 1.—A patient, aged 70, was operated on Oct. 4, 1935, by Dr. J. F. McCloskey at the Skin and Cancer Hospital for a lump in the right breast, diagnosed as probably carcinoma. No palpable lymph nodes were present in the axilla. The pathologic report was chronic cystic mastitis, but the roentgen diagnosis was malignant neoplasia, with a moderate generalized cystiphorous desquamative epithelial hyperplasia of the entire breast. On further inquiry it was learned that the amputated breast was first turned over to the research laboratory, where a part of the actual tumor was dissected out. Sections selected by the pathologist revealed only evidence of chronic cystic mastitis (figs. 1 and 2). In the roentgenograms a nodular neoplasm is visible in the right breast (the nipple of which was pulled forward at the time of the roentgen examination). Very little subcutaneous fat is present, but many fatty loculi are irregularly distributed throughout the body of the gland itself. While no cysts are present large enough to be definitely discernible, the moderately increased thickness and density of the stromal structures were the basis for the roentgen diagnosis of chronic mastitis, and, because of the patient's age, cystic degeneration was inferred. The visible lobulation and radiating extensions of the tumor margins led to the diagnosis of malignancy. While a check of the histologic appearances of the sections gave no reason to change the pathologic report, malignant metastasis developed and the patient died seven months after the operation.

On reviewing the material of this report we learned of the partial dissection of the tumor by the research pathologist, and in his sections there was unequivocal evidence of malignancy.

While experienced pathologists are content to give opinions on pathologic changes in the breast from microscopic examination of small sections of areas selected macroscopically, they realize that frequently systematic examination of sections of the whole breast are necessary to gain a true impression of the state of the whole gland. One small section may show malignancy while another may reveal cystiphorous desquamative epithelial hyperplasia and still another some other pathologic change. It is conceded that carcinoma may be present in areas not suspected from macroscopic examination. One of the possible advantages of the roentgen examination is expressly in this connection. The equivalent of macroscopic examination of the whole gland is made available and the pathologist is given more aid in selecting suspicious areas for histologic study.

Fig. 3.—The delicate radiating striations springing from the periphery of this deep seated neoplasm was thought to indicate malignancy.

Excepting for one case in this series, the patient or the clinician or both found a tumor in the breast prior to the roentgen studies.

Any tumor that is palpable can be demonstrated in the roentgenogram. If tumors too small for detection by palpation could be revealed, the roentgen examination might become more essential in breast tumor diagnosis. As a matter of fact, this can already be partially realized if resort is made to serial roentgenographic studies of the normal breast in women

5. The histologic studies were made by Dr. Damaso deRivas, Professor of Parasitology, University of Pennsylvania School of Medicine, and Dr. Eugene Case, pathologist to the Graduate Hospital of the Graduate School of Medicine, University of Pennsylvania.

past the age of 25. This procedure is so simple and economically practicable that it is certainly worthy of serious consideration as a measure to be taken now in the control of mammary carcinoma.

CASE 2.—A woman, aged 50, was one examined in a series selected for roentgen studies of normal breasts. While she was being placed in position for the first examination, a small nodule was felt deep in the right breast, and from its roentgenographic appearance a diagnosis of a malignant neoplasm was made, based on the delicate radiating striations springing from its margins. After amputation this diagnosis was confirmed by Dr. Damaso deRivas from histologic studies (figs. 3 and 4).

Like Espaillat,[6] we made our most frequent errors in the diagnosis of mammary malignant growths in breasts if examined at the time of their greatest physiologic activity. The complexity of the stromal structures, the wide irregular intermeshing of the perilobular fatty infiltration and the extensive crossing of these shadows by those of the vascular tree, the superficial radicles of which are always so plainly visible in the roentgenograms, make visibility of the exact marginal limits of a

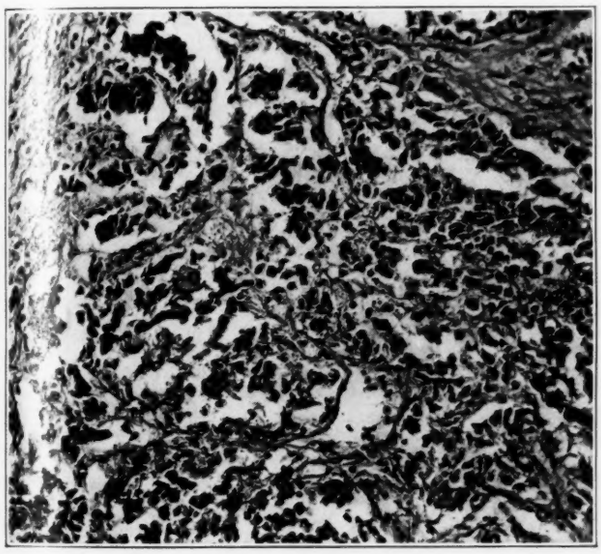

Fig. 4.—Section of tumor seen in figure 3, regarded as carcinomatous by the pathologist.

neoplasm very difficult. And since one of the essential criteria for malignant infiltration is the presence of an invading peripheral margin, the difficulties we encountered in differentiating the tumor margins from the complex normal adjacent and superprojected tumor bed tissue outlines can be readily appreciated. Our diagnostic judgment was correct on misinterpreted premises in two cases in which there was visualization of irregular margins of benign growths, due not to malignant peripheral invasion but to the reactive proliferation in the perifocal parenchyma, giving the growth a malignant appearance. It is mainly from this chance observation that we believe some element of speculation will generally be present in a diagnosis based on a single roentgen study of an adult breast, still active in a woman during the premenopausal years. What can be accomplished by serial examinations may be entirely another matter, and this has already been appreciated by Reiman and Seabold,[7] who made serial planimetric measurements of breast lesions whose size and shape changed with menstruation and time. Warren[8] and Lockwood[3] also stressed the usefulness of this procedure, which deserves more emphasis.

Some have suggested that enlarged lymph nodes in the axilla, which can be demonstrated in the roentgenograms, have malignant or inflammatory identifying characteristics. Seabold[9] coped with this problem and at one time thought that there was a difference in density between inflammatory and malignant lymph nodes. We have failed to note such a difference, and to complicate the picture further is the frequent occurrence of enlarged nodes when the breasts are apparently normal. Radiation therapy appears to us as one method offering some diagnostic aid, and we have resorted successfully to this method.

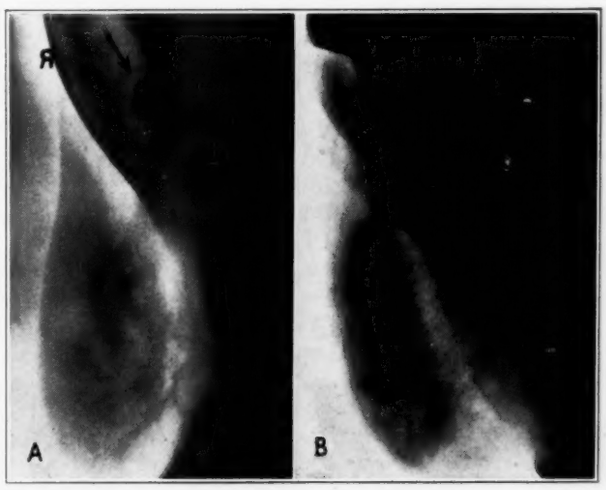

Fig. 5.—In *A* an enlarged node is seen in the axilla, which disappeared after roentgen irradiation (*B*).

Fig. 6.—Invasion of mammary parenchyma into the bases of the subcutaneous projections of the suspensory ligament is seen, dividing the subcutaneous fat into lobules, making differential diagnosis from nodules in the gland itself difficult by palpation alone.

CASE 3.—A woman, aged 42, married, menstruating normally, noticed a lump behind the right anterior axillary fold while bathing. There was some slight pain in the right breast but she was not sure that this was abnormal because she regularly experienced pain and discomfort in the breasts, usually preceding the onset of menstruation. The first roentgen examination nicely demonstrated this palpable node and revealed some

6. Espaillat, G. Alexander: Contribution to the Radiographic Study of the Normal and Pathological Breast, thesis for the University of Paris, 1933.

7. Reiman, S. P., and Seabold, P. S.: Correlation of X-Ray Picture with Histology in Certain Breast Lesions, Am. J. Cancer **17**: 35 (Jan.) 1933.

8. Warren, S. L.: A Roentgenologic Study of the Breast, Am. J. Roentgenol. **24**: 113-124 (Aug.) 1930.

9. Seabold, P. S.: Roentgenographic Diagnosis of Diseases of the Breast, Surg., Gynec. & Obst. **53**: 461 (Oct.) 1931.

accentuation of the stromal striations leading up to it from the breast itself. A diagnosis was tentatively made of a benign, probably inflammatory, process and within four weeks an approximate total of 1,600 roentgens was delivered into the region of this node by cross-fire roentgen irradiation. At the end of this time the node had completely disappeared; both palpation and roentgen examination did not disclose any evidence of its presence.

The case has been followed for fifteen months and so far no changes have occurred (fig. 5).

The least number of errors in the roentgen diagnosis of malignant mammary tumors was made in the atrophic breasts, most of which occur in the fifth and sixth decades, usually at or after the menopause. In these breasts the single examination has already exhibited its diagnostic possibilities for accuracy. The chief reason for this is the clear visibility of the tumor margins afforded by the homogeneous fat content of the breast, the fat being a good radiolucent contrast medium. It is often surprising how easily discernible are the striations of malignant infiltrations radiating from the margins of a growth in breasts of this type; this is also partially true when there is excessive fat infiltration in the active breast of the younger individual. This is a particularly fortunate circumstance because it is in this type of breast that the clinician and the surgeon have the greatest difficulty in making a diagnosis.

Some slow growing tumors show a tendency to remain localized, enlarging slowly by gradual peripheral accretion of new cells, which press the tumor bed centrifugally so that compactness develops in a narrow zone adjacent to the neoplasm, thus creating a smooth surface, and leading to an erroneous roentgen impression of benignancy. When such tumors are small and confined within the limits of the body of the gland itself, it is hard to understand how the roentgen examinations can be of real help in deciding the question of malignancy. But it is characteristic of this kind of tumor sooner or later to enlarge "out of bounds" and to cross the sharp limiting zones of the mammary gland, either forward into the clear fatty subcutaneous layer or backward into the clear cleft between the corpus mammae and the pectoral muscle. Under such conditions it is justifiable to raise the question of malignancy. This was rather graphically impressed on us after reviewing whole breast sections of an instructive collection, an opportunity kindly given us by Dr. Joseph McFarland in his laboratory in the University of Pennsylvania School of Medicine.

Fig. 7.—The nodule visible in this breast felt smooth and freely movable and therefore seemed benign but was thought malignant from its roentgen appearance because of the invading posterior margins.

NODULARITY

Palpation of the breast is probably one of the least satisfactory procedures in physical diagnosis. Not only does there seem to be a lack of standardization in the technic, but there is also chaotic misinterpretation of the results. The consistency of a breast is frequently referred to without the slightest appreciation of how a thick subcutaneous layer of fat may modify this property. The multinodularity often ascribed to a breast is not commonly due to the unevenness of the surface of the gland itself but to isolated lobules of fat separated from one another by dense subcutaneous projections of the suspensory ligaments of Cooper. This can be proved by subcutaneous severance of the attachments of these ligaments, which abolishes the palpable multinodularity. The distribution of the subcutaneous fat, the extensions of the fibrous suspensory ligaments through it to the skin and the character of fat infiltration in the body of the gland itself are shown with extreme clarity in the roentgenograms. This should engender a reliable approach to the interpretation of the observations made by palpation and obviate undercutting of the skin for clinching the diagnosis. In the roentgenogram shown in figure 6, extensions of the mammary parenchyma into the bases of many of the subcutaneous projections of the ligamenta suspensoria are seen, dividing the subcutaneous fat into lobules, making differential diagnosis from nodules in the gland itself difficult by palpation alone.

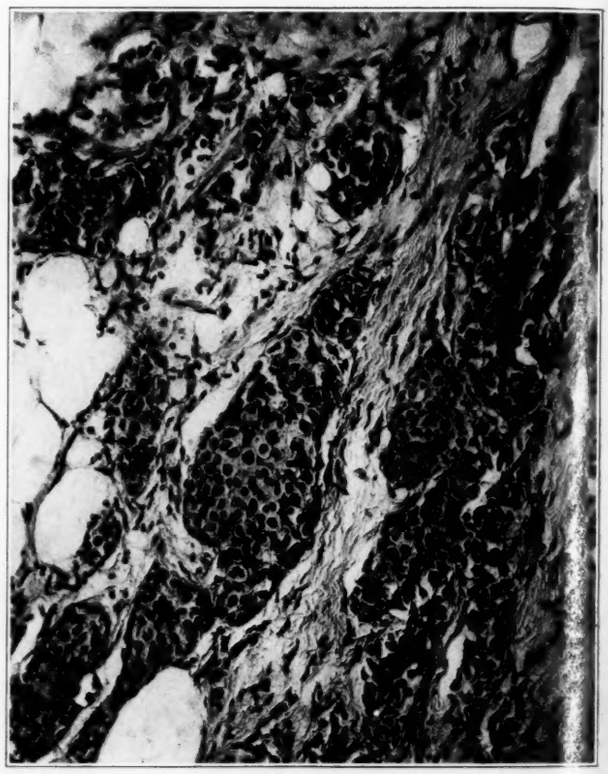

Fig. 8.—Section of nodule in figure 7, showing its malignant histologic characteristics.

Deep seated nodules are found more easily by the roentgen examination than by palpation. This implies, of course, that the proper roentgen technic has been employed for demonstrating the tissues in the base of the gland. Superficial nodularity is so clearly shown in the roentgenograms that there is no difficulty in making a differential diagnosis between false nodularity

due to the subcutaneous loculi of fat and actual nodulation of the anterior surface of the mammary gland. Even extensions of the gland parenchyma into the bases of the ligamenta suspensoria are clearly seen in the roentgenograms. This finding is probably the only roentgen sign on which to predicate a diagnosis of desquamative epithelial hyperplasia.

Whether a given nodule is solid or cystic from its roentgen appearance would seem to go unquestioned in some reports. It is claimed that a cystic tumor is more radiolucent than a solid tumor. The roentgen shadows of these two types of tumors do not differ as the shadows cast by transillumination. We have, however, made a successful differential diagnosis not by the differences in densities but by careful attention to a study of the margins. A cystic tumor, uncomplicated by perifocal inflammatory infiltration and not surrounded by too much active gland tissue, has a sharp, smooth and almost perfect circular margin, while a solid tumor, under the same circumstances, practically never has a perfect circular margin but always some eccentric bulge due to lobulation or some flattening or interaction of its periphery due to fibrosis.

On the whole, we believe that more accurate information concerning nodularity can be obtained from the roentgen examination, than from palpation, as happened in the following cases:

CASE 4.—The nodule visible in the left breast of the patient was palpable but felt smooth, freely movable and seemed benign. The posterior margins in the roentgenograms, however, were seen to radiate definitely into the parenchyma, and the roentgen diagnosis was malignant neoplasia. This was confirmed by histologic study done by Dr. Eugene Case (figs. 7 and 8).

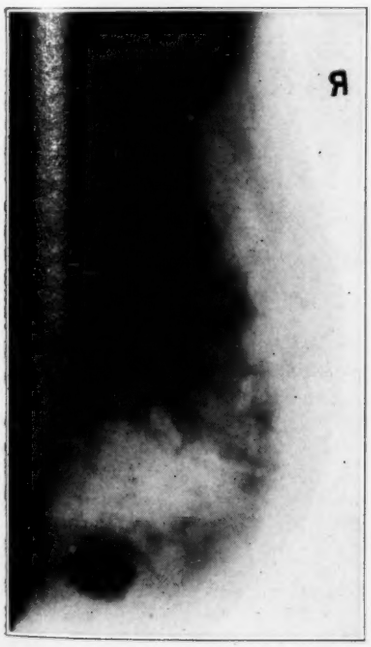

Fig. 9.—The nodule in this breast was thought to be malignant because it was associated with fixation and puckering of the overlying skin. In the roentgenogram, the smooth margins and short pedicle were the reasons for assigning a benign basis to this growth.

CASE 5.—A woman, aged 52, felt a small lump in the right breast, which by palpation led the surgeon to believe that the growth was malignant because of its immobility, puckering of the skin and irregular lobular surface. In the roentgenograms, however, the surface of the nodule appeared smooth, the base was attached by a short, well defined pedicle and there was no appreciable disturbance in the architecture of the perifocal parenchyma. The nodularity present during palpation was probably false owing to lobulation of the subcutaneous fat. The lesion was regarded as benign roentgenographically, and so it proved to be at the time of operation by Dr. Dorothy Case Blechschmidt; after histologic study a fibro-adenoma with some cystic degeneration was disclosed (figs. 9 and 10).

SUMMARY

The roentgenographic examination of the breast is a more useful diagnostic procedure than is generally appreciated. A diagnostic accuracy better than that resulting from macroscopic inspection of sections can be attained. A remarkably high percentage of roentgen diagnoses is proved to be correct by histologic studies, and this can be increased if the examination is more seriously and uniformly emphasized. Early malignancy can be very frequently determined, especially in the fat and postclimacteric breast. Otherwise there are many limitations to the roentgen study of the pathologic breast which probably could be materially reduced if resort were made to serial examinations.

If periodic examinations of normal breasts were carried out in women past 25 years of age, we venture to say that a much more effective campaign could be therapeutically waged in carcinoma of the mammary gland because of the diagnosis of early malignancy so obtainable. The examination can easily be done with so little expense that it is entirely practicable from these standpoints. It is even possible that the therapeutic effect on breasts of many endocrine substances might be revealed more graphically by the roentgen examination than by any other practical clinical method now available, and this suggestion warrants further investigation.

Fig. 10.—Sections of the tumor in figure 9, a fibro-adenoma with cystic degeneration.

255 South Seventeenth Street — 269 South Nineteenth Street.

To a Young Man of Good Disposition.—This delicate word sickness includes drink, the contagious diseases, infant mortality, starvation, the sweating system, the immigrant alien, dangerous trades, insanity, childbirth, heredity, attempted suicide, accidents, assaults, and all the innumerable adventures, tragical or comical, which end in the Casualty Department. To a young man of good disposition, tired of the preliminary sciences and of humanity stated in terms of anatomy and physiology to the satisfaction of the examiners, this plunge into the actual flood of lives is a fine experience.—Paget, Stephen: Confessio Medici, New York, Macmillan Company, 1931.

DERMATITIS FROM DYED AND OTHERWISE TREATED CITRUS FRUITS

REPORT OF TWO CASES

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The practice of coloring citrus fruits by means of dyestuffs, aniline and other substances to give a fully ripened appearance has come into vogue only during the past two to two and one-half years. A large number of chemicals have also been used in recent years to ripen artificially and preserve the fruit for distant markets. These include ethylene gas, kerosene, paraffin, soap, wax and borax. The fruit is also washed in various fungicidal solutions, the formulas of which are generally secret and known only to the manufacturers. Some orange growers use insecticide sprays on their trees, while others cover each tree with a sort of tent into which is pumped hydrocyanic gas. It has also been found that gases from the exhaust pipe of an automobile have a ripening effect on green fruit skins, an action similar to that obtained with ethylene, and as a result this method also has been employed. The United States Department of Agriculture informs us that there is some evidence that oranges may themselves produce small amounts of ethylene during the natural fading out of the green color in the peel after picking, and it is known that this is the case with other fruits. It is asserted that 90 per cent of the Florida oranges in the New York markets are artificially colored. According to the United States Department of Agriculture the permitted food dye used for artificially coloring fruit is Yellow O B, as well as a combination of two dyes similar to sudan I and sudan II except that

Fig. 1—Dermatitis of face in case 1 (hands and forearms similarly affected).

one is formed by coupling xylidine and amidoazoxylene on beta-naphthol, and the other by coupling orthotoluidine on beta-naphthol, both processes being carried out in alkaline solution. Yellow O B is known to chemists as orthotoluene-azo-beta-naphthylamine. In a recent article Louis Schwartz [1] draws attention to a dermatitis occurring from wrist-watch straps dyed with amidoazotulene hydrochloride, which contains one of the same radicals found in Yellow O B. Three different brands of Florida oranges purchased in the market where the patient worked were used for patch testing. All three brands were labeled "color added." In addition we secured some Florida oranges that were picked from the trees and delivered directly to us, no treatment or color having been added.

The California oranges furnished us for the sensitivity test were accompanied with the following information from the United States Department of Agriculture:

The unwashed oranges were of the Washington navel variety and had not been treated in any way. The washed oranges had

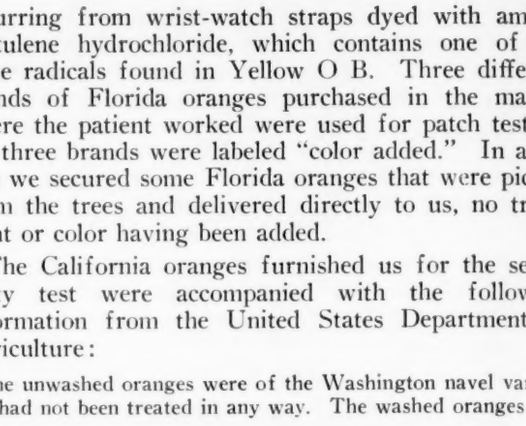

Fig. 2.—Upper area represents a negative patch test to the inside of a dyed orange peel. Lower area is a positive patch test to the outside of a dyed and treated orange peel.

been given the commercial treatment being practiced generally at the season at which these oranges were picked. They were not treated with ethylene, although similar oranges earlier in the season would be treated with ethylene.

The oranges from the grove were first dumped into a long metal tank containing a solution of 2 parts of boric acid and 1 part of borax, so that the total content of borates was about 6.9 per cent. The oranges were kept in this solution for two and one-half minutes, the solution being at a temperature of 117 F. From this solution they went to another tank, where they were washed with soap and water. The soap used was a liquid soap labeled "Bobrick's Citr-O-Zone No. 1 for Oranges Bobrick Mfg. Co., Los Angeles." The oranges were then passed under sprays of clear, clean water and then went through a drier.

Both the washed and the unwashed oranges came from a grove at Upland, Calif. The trees are about 30 years old. The trees had not been sprayed or dusted this season. They will be either sulfured or fumigated with cyanide after the fruit is picked.

There has been no special law passed with reference to using dyes on oranges. The federal Food and Drugs Act provides that a product shall be considered adulterated if it is stained or colored in a manner whereby damage or inferiority is concealed.

Some years ago a standard for the maturity of oranges was adopted which provided that an orange would be considered mature if the ratio of soluble solids to acid calculated as anhydrous citric in the juice was 8 to 1 or greater. When coloring was first practiced on oranges it was held that oranges were mature when judged by this ratio and that inferiority was not concealed by coloring them. Last fall, however, the department issued a notice that after Sept. 1, 1936, they would consider that oranges were colored to conceal inferiority regardless of

From the Skin and Cancer Unit of the Post-Graduate Hospital.
Mr. Louis Schwartz collaborated in the testing of the normal subjects with orange peels and dyes.
1. Schwartz, Louis: Skin Hazards in American Industry, Pub. Health Bull. 229, part 11

this test if they were colored to indicate that they had attained their best quality when as a matter of fact they were picked before they had attained their best quality. [We believe this date has since been put forward.]

Further information obtained from other sources relative to the handling of California oranges follows:

The spray used in the orange groves is an oil spray; a highly refined petroleum oil known as cosmetic oil. There is also some sulfur used in dusting. The petroleum oil penetrates the skin of the orange and there is undoubtedly still some of it present in the peel. There is no lead arsenate used in California. They have been trying out a spray of calcium chloride and selenium. This has been experimental only and probably very few of these oranges have been marketed in New York. They have been experimenting in Berkeley with "felocide," made up of selenium and sulfur. This is not in commercial use as yet. The oranges are all washed with a very good quality of soap and they are rinsed and dried before packing. A very few oranges are waxed. This is done with a wax made from the leaves of a palm that grows in South America and is much like paraffin. In the washing of the oranges there is a little borax used, which is rinsed off. There is about 0.01 per cent of this which remains in the peel, as measured in terms of boric acid. There is no artificial color used on California oranges. The only artificial coloring done at all is by sweating them with ethylene gas. A few sprayers have used a very small amount of creosol. However, the Orange Exchange discourages the use of any creosol in the spray. Lately they have been experimenting with sulfide of fatty alcohols.

TABLE 1.—*Results of Fruit Tests in Case 1*

Treated or dyed Florida oranges:	Inside Rind	Outside Rind
1. Parson Brown (color added)	Negative	Positive
2. Monarch Grove (color added)	Negative	Positive
3. Pineapple orange (color added)	Negative	Positive
4. Temple orange (dyed)	Negative	Positive
5. King orange (dyed)	Negative	Positive
6. Tangerine (dyed)	Negative	Positive
7. Grapefruit	Negative	Positive
8. Nectarine	Negative	Doubtful
9. Florida orange untreated*	Negative	Negative
10. Florida grapefruit untreated*	Negative	Negative
California fruits:		
11. California red orange	Negative	Strongly positive
12. California light orange	Negative	Strongly positive
13. California Sunkist	Negative	Weakly positive
14. California rough skin orange	Negative	Positive
15. California smooth skin orange	Negative	Positive
16. California orange untreated	Negative	Strongly positive
17. California orange treated	Negative	Strongly positive
18. Gauze dipped in ether rubbed on California orange—Negative		
19. Gauze dipped in chloroform rubbed on California orange—Negative		

* The fruits used in tests 9 and 10 were picked from the tree in Florida and shipped directly to us.

This represents only a small fraction of information on some of the many and varied processes to which the citrus fruits are subjected today. We found it exceedingly difficult to get reliable information on the various processes from any source. Each grower employs a slightly different method from the next, and all the procedures are subject to frequent changes in each of the groves. There is a definite reluctance in many instances to give information that would prove helpful in an investigation of this kind. All these factors probably play their part in accounting for the positive patch tests obtained from presumably undyed and untreated California oranges (to be mentioned in detail later) when known undyed and untreated Florida oranges gave negative results and the patient also reacted negatively to the oil of orange and lemon.

CASE 1 (presented at the February 1936 meeting of the New York Academy of Medicine by Dr. Traub).—M. C., a white man, aged 31, a fruit and vegetable handler, whose family history was irrelevant except that his mother had diabetes, had his first skin eruption in 1929, which consisted of a slight irritation of the hands and face, lasting a very short time. In 1932 he developed a more severe irritation of the same areas and at the time the eruption was attributed to the arsenic used on the fruits and vegetables he handled. He was found to have excessive amounts of arsenic and lead in the urine and he was positive to lead arsenate and arsenic trioxide by patch tests. He had frequent attacks of diarrhea, nausea and vomiting. Several months later, when this eruption had cleared up, patch tests with sodium and lead arsenate were repeated and found to be negative.

TABLE 2.—*Dyes, Fungicidal Solutions, Ripeners and Preservatives Tested in Case 1*

Parson Brown	Negative
Tetrazine Yellow, 20%	Negative
Chrome Yellow, 20%	Negative
Naphthol Yellow, 20%	Negative
Sudan III, 5%	Negative
Yellow O B	Positive
F. M. C. no. 1 } (shipped from packing house in }	Negative
F. M. C. no. 6 } Florida, exact nature unknown) }	Negative
Soap solution	Negative
Borax	Negative
Kerosene	Negative
Wax, white	Negative
Wax, brown	Negative
Paraffin	Negative
O. K. solution 1% (fungicide solution used on oranges) (O. K. solution furnished us by chief chemist of Food and Drug Administration, U. S. Dept. of Agriculture)	+
Cotton in olive oil and ethylene	Negative
Cotton in liquid petrolatum and ethylene	Negative
Cotton in water and ethylene	Negative
Red dye 1:4 diluted	++++
Red dye 1:5	++++
Red dye 1:10 diluted	++++
Red dye 50%	++++
Red dye 1:100 diluted	±
Oil of orange	Negative
Oil of lemon	Negative

Laboratory reports on this patient were as follows: The blood Wassermann reaction was negative. Routine examination of the urine gave negative results. The lead content was 0.016 mg. in 1,000 cc.; arsenic, 0.140 mg. per hundred grams of solids. The basal metabolism was —11.6.

Blood examination revealed 4,530,000 erythrocytes; 83 per cent hemoglobin and 5,800 leukocytes, the differential count being polymorphonuclear neutrophils 44 per cent, lymphocytes 50 per cent, eosinophils 5 per cent and basophils 1 per cent. Chemical tests revealed: urea nitrogen 14.9 = 13.9, sugar 79 = 100.4, uric acid 1.86 = 2.35, chlorides 466.8 = 441.8, and carbon dioxide 64.8.

The present trouble began in April 1934 with a severe erythematous, edematous, vesicular, weeping, crusting and scaling eruption covering the hands, face and neck. The eyelids were extremely swollen. The eruption came on while the patient was working in an open fruit and vegetable market.

Patch tests were made with the following substances to determine the cause of this irritation and were all negative: chlorox 10 per cent, Colgate face powder, wife's face powder (Lady Esther), wife's lipstick (Regina), tooth paste (Colgate), Octagon soap, cold cream, boric acid ointment, Camay soap, petrolatum, cotton, chicken feathers, duck feathers, sheep wool, silk, goosefeathers and tobacco (Camel).

Fruit tests are given in table 1; dyes, fungicidal solutions, ripeners and preservatives in table 2.

CASE 2.—S. L., a man, aged 35, Norwegian, a cook, stated that he did not have any skin condition until somewhat over two years before, when an eruption appeared on the hands. This was erythematovesicular and was most pronounced about the palms and fingers. The rest of the body was entirely free and clear. The patient stated that he had noticed that the handling of certain foodstuffs in his work as a cook seemed to aggravate the condition. He was quite definite in his history that oranges and to a less degree lemons and grapefruit seemed to cause flareups but only during the past two to two and one-half years, as he had always previously handled these fruits without irritation. Examinations for tinea on the hands and feet were negative both culturally and by a direct smear. All trichophytin, dermatomycol and oidiomycin tests were negative. The Wassermann and Kahn tests were negative. Patch tests were done by applying various foodstuffs with the following results: spinach negative, apple rind negative, strawberry rind doubtful, grapefruit rind +, orange rind ++, tomato rind negative, lemon rind ++, apple meat negative, strawberry meat negative, grapefruit meat negative, orange meat negative, tomato meat negative and lemon meat negative. All routine scratch tests, including thirty-two foods, all pollens and epidermals were negative.

It is interesting in this particular case to note that the patient's history is very definite as to the onset of his dermatitis, and that this onset coincides exactly with the time the practice of dyeing citrus fruits was first begun.

COMMENT

Both of our patients, but particularly patient 1, were studied for a long time before this report was prepared. Patient 1 has been under treatment for years and has repeatedly been hospitalized for observation and testing. Patient 1 had several attacks of dermatitis, one of which was attributed to arsenic, before the present trouble began. For this reason we have made every effort to exclude all other factors as far as possible by careful history, observation and patch tests. In addition to the tests performed on these two patients, a number of normal individuals were checked and the results are of considerable interest and significance. It was discovered that the manner in which the orange peel was applied to the skin had considerable bearing on the result obtained. In all the tests tabulated in the foregoing, the outer surface of the peel was simply laid next to the skin surface. We found, however, that if the peel was crushed or squeezed and some of the oils contained in it were expressed on the skin area to which the peel was then applied, many positive tests resulted, indicating that the concentrated oils so expressed, whether obtained from dyed or undyed oranges, were apparently a primary irritant. Eight physicians and nurses were tested with the rind of a California Sunkist and a Florida color added orange. The test material remained on all for from twenty-four to thirty-six hours except that in the case of the senior author (E. F. T.) the reaction was so severe in thirty minutes (erythema and vesiculation) that the patches had to be removed. None of the seven others showed a reaction to the skin of the Sunkist orange, but three reacted positively to the dyed Florida orange. In two the reaction was strong enough to cause vesiculation and small bleb formation. Four of the same group applied the pure powdered dyes in a refined white liquid petrolatum. Three showed no reaction after twenty-four hours, but one was positive to all the dyes (Yellow O B, sudan I and sudan II) after seventy-two hours—the control with the white liquid petrolatum was negative. Although the senior author failed to react to the dyes in oil after twenty-four hours, there was marked erythema and vesiculation present at the site of the F. M. C. No. 1 and to a less degree at the place of the Yellow O B test in the soap solution supplied to us from a Florida packing house. The soap solution control was negative.

These additional tests have demonstrated that the manner of application of the orange peel is of considerable importance, because crushing or squeezing the rind must be avoided if the patch test is used to determine sensitivity to substances applied to the outside of the peel. Delayed reactions should be watched for, as these occur occasionally. The following facts seem important (case 1):

1. A visit to the fruit market would immediately be followed by a flareup in the patient's skin eruption even though nothing was actually handled.
2. When the patient was given a dyed orange to handle for a few minutes while in the hospital, erythema and vesiculation could gradually be seen developing.
3. Keeping the patient away from citrus fruits always promptly freed him from his eruption, which invariably returned within twenty-four to forty-eight hours after he returned to the market.
4. Patch tests with dyed fruit produced not only local but focal and general reactions as well.
5. Patch tests with known untreated and undyed fruit skins gave negative results.
6. A circumstance of case 1 for which we are unable to account on the basis of information supplied us and despite our many repeated tests is the positive reaction to undyed oranges from California. All known dyed fruit from Florida gave positive tests, while the fruit from this state, which to our certain knowledge was undyed, gave repeatedly negative tests. The fact that this patient regularly reacted negatively to orange skins that we knew were untreated and undyed and gave positive tests to the citrus fruits from California obtained on the market here certainly seems to incriminate some preparation used on the California oranges.

CONCLUSIONS

1. For more than the past two years some citrus fruits have been treated with various dyes in addition to the other chemicals used for aging, ripening and preserving against molds and decay.
2. Two patients were seen with a dermatitis from handling such treated and dyed fruit.
3. In both instances the dermatitis was caused by the chemically treated or dyed fruit, our patch tests in both patients indicating Yellow O B dye as the prime offender.
4. Evidently the dye and chemicals used did not penetrate even to the inside of the peel, as patch tests with the inner surface of the rind gave negative results. Patch tests with the meat of the fruit also were negative.
5. Patch tests with dyed orange skin were repeatedly found to be positive in our cases. Patch tests with known undyed and untreated skins (Florida oranges) were negative.
6. In case 1, patch tests with dyed orange peel produced actual blistering of the skin and a severe focal and general reaction.
7. The dyes used on citrus fruits may definitely irritate some skins.
8. These dyes are not general irritants, because the majority of individuals do not react to them.
9. Hypersensitivity to the dyes may be acquired by constant and repeated exposure.

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AMEBIASIS IN FOOD HANDLERS IN SAN FRANCISCO

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In this paper it is proposed to give completely the results of the survey for intestinal protozoa in food handlers conducted during the past three years in some of the hospitals, hotels, restaurants, clubs and lunch rooms of San Francisco. A preliminary report [1] has been published during the progress of this investigation. A total of 1,072 employees of public dining rooms and kitchens was examined and it was found that twenty-two, or 2.04 per cent, were infected with Endamoeba histolytica.

There were no fresh examinations of the stool specimens made, as it was thought that the most efficient method for disclosing protozoan infections with economy of time and labor was to make the fecal smears on the premises, directly after the passage of the stool, immersing them immediately in the fixing fluid. The smears, then brought to the laboratory, were stained by the iron alum-hematoxylin method and subsequently examined. Every employee was required to submit one specimen on each of three successive days. All those found to be infected with Endamoeba histolytica were compelled to stop work for not less than two weeks, during which period each infected person was given a course of treatments with carbarsone. These treated food handlers were then checked by three successive daily stool examinations and were allowed to return to their employment when found negative. Each person was reexamined every two weeks for a period of three months. There were no cases resistant to treatment and there were no reinfections or relapses during these follow-up periods.

TABLE 1.—*Results of Examination of Food Handlers*

Place	Number Examined	Endamoeba histolytica	E. coli	E. nana	Iodamoeba bütschli	Giardia intestinalis	Trichomonas hominis	D. fragilis	Chilomastix mesnili	Enteromonas hominis
Hospital A										
(1)	129	2	25	14	5	4	1	2	..	1
(2)	44	..	..	..	1	..	..	..	..	..
Hotel A	64	1	1	1	2	3	..	..	..	..
Hotel B	165	5	4	3	2	5	..	..	..	..
Hotel C										
(1)	64	2	7	4	..	6	1	..	..	..
(2)	71	..	3	3	1	5	..	..	..	..
Club A	39	1	4	..	..	..	..	..	..	..
Club B	22	..	2	..	..	1	..	..	..	..
Club C	13	2	1	1	..	..	..	..	..	..
Hotel D	56	2	6	2	2	3	..	..	..	..
Club D	21	2	..	..	1	..	..	..	..	..
Cafeterias	164	5	..	1	3	4	..	..	1	..
Health home	10	..	..	..	..	..	..	..	..	..
Hotel E	88	..	3	2	2	4	..	..	..	..
Lunchroom A	33	..	..	..	..	1	..	..	1	..
Restaurant A	44	..	..	3	..	2	..	..	..	..
Restaurant B	4	..	..	..	..	..	..	..	..	..
Lunchroom B	14	..	1	1	..	..	..	..	1	..
Grill A	6	..	..	..	..	..	..	..	..	..
Lunchroom C	12	..	..	..	..	..	..	..	..	..
Grill B	9	..	1	1	..	..	..	..	..	..
Totals	1,072	22	58	36	19	38	2	2	3	1
Per cent positive		2.04	5.41	3.35	1.77	3.54	0.18	0.18	0.27	0.09

The results of the examinations of the entire food handling personnel of one hospital, one health home, five hotels, four clubs, four cafeterias, two restaurants, two grills and three lunchrooms are given in table 1.

Of the twenty-two persons found positive for Endamoeba histolytica, eighteen had been born, lived or visited outside the United States. A notable feature in the histories of these twenty-two people is an almost complete absence of admitted symptoms, only nine complaining of any gastro-intestinal upset, as shown in table 2.

TABLE 2.—*Positive Cases of Endamoeba Histolytica*

Name	Age	Sex	Position	Residence	Clinical History
1. E. E.	36	♀	Waitress	U. S.	None
2. W. P.	40	♂	Cook	Canada and U. S.	None
3. G. H.	40	♂	Baker	Germany and U. S.	None
4. G. S.	40	♂	Waiter	Greece and U. S.	Slight intestinal upset in August 1933; no medical care
5. P. M.	28	♂	Waiter	Italy and U. S.	Constipation
6. B. A.	36	♂	Waiter	Italy and U. S.	Occasional diarrhea
7. S. D. B.	31	♂	Waiter	Italy and U. S.	None
8. H. B.	29	♂	Bus boy	Turkey, U. S., Mexico	Under treatment in 1930 in Mexico City for loss of appetite and abdominal pain; no further illness
9. A. P.	42	♂	Waiter	U. S.	None
10. J. S.	50	♂	Steward	U. S. and So. Africa	Diarrhea while en route to Capetown in 1903
11. P. D.	49	♂	Second cook	France and U. S.	None
12. J. R.	31	♂	Waiter	Switzerland and U. S.	Had occasional diarrhea
13. M. D.	50	♂	Pot washer	France and U. S.	None
14. A. R.	25	♂	Bus boy	Italy and U. S.	Treated during 1933 for gas
15. P.	28	♂	Bus boy	Italy and U. S.	None
16. F. G.	63	♂	Waiter	Italy and U. S.	None
17. T. S.	40	♂	Cook	Yugoslavia and U. S.	None
18. T. C.	59	♀	Assistant manager	U. S.	None
19. E. Z.	24	♂	Dish washer	U. S.	None
20. C. R.	28	♂	Dish washer	Mexico and U. S.	Intestinal disturbance in 1928; medical care; no history available
21. J. K.	50	♂	Baker	Germany and U. S.	Diarrhea and stomach upsets
22. J. G.	38	♂	Supply boy	Scotland, China, Russia and U. S.	None

During the progress of the food handler survey, the Public Health Department of San Francisco conducted a companion survey to establish the exact plumbing efficiency of the hotels. This investigation was incomplete but in all hotels where the plumbing was inspected it was found that back siphonage (causing the contamination of water supply) is prevented by the maintenance of an adequate water pressure.

There has been little evidence to prove or disprove a direct contamination of food under practical conditions by food handlers. Hands, débris under finger nails and nail parings were examined after defecation and before the hands were washed in a group of seventy-four infected persons by Spector, Foster and Glover.[2] In only five of those examined were the cysts of Endamoeba histolytica found, two showed very few live E. histolytica large cysts, one showed very few dead E. histolytica large cysts, and two showed live small cysts. These observations along with those noted in the previ-

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In cooperation with Dr. J. C. Geiger, director of the Department of Public Health, San Francisco.

1. Johnstone, H. G., and Iverson, Margaret K.: Food Handlers and the Epidemiology of Amebiasis, Am. J. Trop. Med. **15**: 197-207 (March) 1935.

2. Spector, Bertha K.; Foster, J. W., and Glover, N. G.: Endamoeba Histolytica in Washings from the Hands and Fingernails of Infected Persons, Pub. Health Rep. **51**: 163-165 (Feb. 8) 1935.

ous paper [1] suggest that contamination of food by persons infected with Endamoeba histolytica rarely happens under ordinary conditions of foodhandling.

SUMMARY

A protozoological survey was made of 1,072 food handlers in public dining rooms and kitchens in San Francisco. Twenty-two persons, or 2.04 per cent, were found to be infected with Endamoeba histolytica. The concomitant protozoan infections were found to be correspondingly low, as shown in table 1.

The clinical histories of the cases positive for Endamoeba histolytica are given in table 2.

Parnassus and Second avenues.

Clinical Notes, Suggestions and New Instruments

HODGKIN'S DISEASE WITH LEUKOPENIA

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The blood picture in Hodgkin's disease has been of great interest and a subject for controversy since Bunting [1] published his classic work on this subject over two decades ago. Bunting postulated two constant features in the blood count: "an increase in blood platelets and an absolute increase in transitional cells." Furthermore, he stated that "in early cases there is a transitory increase in lymphocytes and basophils with a deficiency in eosinophils and a normal or low neutrophil percentage which is followed by a gradual decrease in lymphocytes and an increase in eosinophils. In late cases there existed a marked neutrophilic leukocytosis with a diminution in white cell elements other than in those cells and the transitionals." In the early cases of one year or less in duration he found that there was a normal or slightly diminished total while blood cell count and in those of longer duration a moderate or sometimes extreme leukocytosis.

Numerous contributors have disagreed with Dr. Bunting. Barron,[2] Cooper,[3] and lately Roth and Watson [4] have argued that there is no typical blood picture. However, Falconer,[5] Boles [6] and Muller and Boles [7] agree that the blood picture is characteristic and is of distinct aid in diagnosis.

In his series of cases Bunting noted no marked reduction in white blood cells, the lowest count in his group being 3,400. Fabian [8] noted a leukopenia in one fifth of the cases he reported. A review of the literature reveals only a small number of cases on record in which there had occurred a marked leukopenia. Of these, it may be seen, a number can be excluded because of high voltage roentgen therapy or coexistent disease of another nature that could also produce leukopenia. Mellon [9] has reported a case of Hodgkin's disease presenting moderate anemia and a severe leukopenia. The white blood count in this instance reached the low level of 800 cells. This case was purely Hodgkin's disease and no treatment that could possibly produce leukopenia was given. Miller [10] cites a case of Hodgkin's disease in which there developed an extreme leukopenia with a reduction in white blood cells to 240 with a complete lack of granular cells and an accompanying anemia. This patient had received high voltage therapy. Gutig's [11] patient with a marked anemia and with a reduction of white cells to 680, of which 55.5 per cent were neutrophils, also had tuberculosis of the peribronchial lymph nodes and miliary tuberculosis of the spleen. Barron [2] has reported a case in which there existed a marked anemia and a leukopenia of 250 cells. This patient had received roentgen therapy over a long period of time. In Pilkington's [12] case the leukocytes dropped to less than 50, but here also high voltage therapy had been administered. Weber's [13] patient with a reduction to 900 cells had received radium therapy previous to the development of leukopenia. In Cooper's [3] paper there is reported a case in which the white blood cell count had fallen to 900 cells and in this instance there had been no previous therapy. At the Société médicale des hôpitaux of Paris [14] there has recently been reported a case of Hodgkin's disease in which the red blood cell count was 1,500,000 and the white blood count 1,600 cells but which had been preceded by high voltage roentgen therapy. Of these reports found in the literature in which there were noted instances of extreme leukopenia in Hodgkin's disease, high voltage or radium therapy had been administered in all but three. Of these three cases, there are two which were purely Hodgkin's disease. It is entirely probable that other cases in which there occurred an extreme leukopenia have been reported, but certainly it is obvious that the condition is rare enough to merit attention.

REPORT OF CASE

B. L., a white man, aged 37, a farmer, married and the father of three children, admitted to St. Luke's hospital Aug. 26, 1935, complained chiefly of "fever." In April 1935 he had been sick for about ten days with headache, fever, constipation and pain in the abdomen. In May of that year he again became ill with a cold, headache, fever and constipation. This attack lasted for two weeks. He was then in fairly good health, although somewhat weak, until August 22, when he again became ill with a cold, fever, headache, generalized muscular aching and a feeling of emptiness in the lower part of the abdomen. He also noted anorexia, occasional emesis and marked constipation. There had been a loss of 30 pounds (13.6 Kg.) since April 1935. History by systems revealed night sweats during the course of his illness, restlessness, and pains in the legs. The past medical history indicated that he had had a gonorrheal infection about fifteen years before, which had resulted in a urethral stricture. The important detail in the family history was that the patient's father died at the age of 51 years of pernicious anemia.

On physical examination the patient was well developed but thin. The skin was hot and dry and there was a café au lait color. The mucous membranes were pale. The pupils reacted to light and to accommodation. There were carious teeth. The lungs were apparently normal. The heart was normal. The pulse rate was 120 and regular. The blood pressure was 120 systolic and 70 diastolic. The abdomen was scaphoid and the spleen was distinctly palpable 1 cm. below the left costal margin. The cervical, axillary and inguinal lymph nodes were palpable but not enlarged. There was no sternal tenderness. Rectal examination and neurologic examination were negative. The temperature on admission was 103.4 F.

Laboratory studies included urinalysis, which showed 1 plus pus but was otherwise within normal limits. The red blood cell count was 2,780,000, hemoglobin 45 per cent and white blood cell count 3,400 with 69 per cent polymorphonuclear leukocytes, 22 per cent lymphocytes, and 9 per cent large mononuclear cells. Anisocytosis and poikilocytosis were present. In all, fifty-four complete blood counts were performed and are given in the accompanying tables. The bleeding time and coagulation time were found to be within normal limits. The platelets varied from 250,000 to 310,000. The icteric index was 6.7. Fractional gastric analysis after histamine showed no free hydrochloric acid and a total and combined acidity varying from 6.7 to 12 degrees. Examination of the stool was

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TABLE 1.—*Results of Twenty-Seven of the Fifty-Four Blood Counts* *

Date	Hemoglobin	Red Blood Cells	White Blood Cells	Polymorphonuclears	Lymphocytes	Mononuclears	Eosinophils	Basophils	Myeloblasts	Myelocytes	Neutrophils	Reticulocytes
8/27/35	45	2,780,000	3,400	69	22	9	..	..	..	..	..	..
8/31/35	44	3,560,000	2,500	73	15	11	1	..	..	..	..	..
9/ 2/35	45	3,220,000	3,000	71	27	1	1	..	..	..	..	2
9/ 5/35	47	3,720,000	3,100	49	35	10	6	..	..	..	2	1
9/ 8/35	48	4,120,000	4,300	67	25	7	1	..	..	..	..	3
9/12/35	51	3,810,000	8,300	78	16	5	6	..	..	..	..	1
9/21/35	35	2,300,000	2,400	68	20	7	..	..	..	5	6	..
9/27/35	41	3,100,000	4,200	73	17	10	..	..	..	..	2	..
10/ 3/35	37	2,650,000	4,100	78	13	..	1	..	..	8	..	..
10/ 7/35	29	1,590,000	1,300	75	12	11	..	..	2	..	..	..
10/ 9/35	30	1,970,000	900	11	27	3	6	1	7	14	3	..
10/11/35	32	2,100,000	900	55	25	2	5	..	2	11	2	..
10/13/35	40	2,720,000	2,900	62	26	5	7	..	..	..	..	..
10/15/35	44	3,100,000	2,100	46	27	9	18	..	..	..	..	..
10/19/35	52	2,770,000	7,500	76	17	..	4	1	..	2	..	..
10/23/35	43	2,610,000	10,600	76	6	..	17	..	..	1	..	..
10/27/35	35	2,000,000	1,800	77	13	3	1	..	1	5	..	..
10/29/35	33	1,960,000	2,100	57	24	4	..	..	3	12	2	..
10/31/35	33	2,100,000	1,200	64	26	4	..	..	4	6	4	..
11/ 2/35	34	1,770,000	1,800	80	10	..	..	..	4	8	2	..
11/ 4/35	30	2,300,000	1,200	68	14	..	..	..	..	18	..	..
11/ 6/35	31	2,010,000	2,000	86	7	..	..	..	1	5	1	..
11/ 9/35	31	2,080,000	3,250	70	10	..	..	1	3	16	..	..
11/15/35	25	1,620,000	3,000	75	10	..	..	..	..	15	..	..
11/21/35	10	850,000	1,800	79	9	..	..	..	..	12	..	..
11/26/35	—10	1,060,000	3,200	63	29	..	1	..	..	7	28	..
12/ 1/35	—10	850,000	2,450	79	12	2	2	..	..	5	6	..

* Note the tendency in the tables toward an increase in percentage in polymorphonuclears and mononuclears.

TABLE 2.—*Results of Fifty-Four Blood Counts*

Date	Hemoglobin	Red Blood Cells	White Blood Cells	Polymorphonuclears	Lymphocytes	Mononuclears	Eosinophils	Basophils	Myeloblasts	Myelocytes	Platelets	Neutrophils	Reticulocytes
8/27/35	45	2,780,000	3,400	69	22	9	..	..	..	..	.....	..	..
8/30/35	41	2,460,000	1,200	53	18	..	..	..	..	29	.....	..	..
8/31/35	44	3,560,000	2,500	73	15	11	1	..	..	..	.....	..	..
9/ 1/35	45	3,010,000	1,900	66	31	2	1	..	..	..	.....	..	..
9/ 2/35	45	3,220,000	3,000	71	27	1	1	..	..	..	.....	..	2
9/ 4/35	48	3,720,000	3,300	59	25	15	1	..	..	..	.....	..	5
9/ 5/35	47	3,720,000	3,100	49	35	10	6	..	..	..	.....	2	1
9/ 6/35	44	4,100,000	4,500	65	30	5	..	..	..	..	.....	..	2
9/ 8/35	48	4,120,000	4,300	67	25	7	1	..	..	..	.....	..	3
9/10/35	52	4,210,000	5,100	79	13	5	2	1	..	..	.....	..	3
9/12/35	51	3,810,000	8,300	78	16	5	6	..	..	..	.....	..	1
9/19/35	35	2,490,000	2,200	60	37	3	..	..	..	..	.....	3	..
9/21/35	35	2,380,000	2,400	68	20	7	..	..	..	5	.....	6	..
9/25/35	37	3,040,000	4,200	71	19	8	2	..	..	..	.....	1	..
9/27/35	41	3,100,000	4,200	73	17	10	..	..	..	..	.....	2	..
9/30/35	43	2,890,000	5,100	70	13	15	1	1	..	..	.....	3	..
10/ 3/35	37	2,650,000	4,100	78	13	..	1	..	..	8	.....	..	..
10/ 5/35	26	2,350,000	2,400	68	15	..	1	..	..	15	.....	3	..
10/ 7/35	29	1,590,000	1,300	75	12	11	..	..	2	..	.....	..	..
10/ 8/35	25	1,590,000	1,000	50	14	15	4	..	..	17	310,000	2	..
10/ 9/35	30	1,970,000	900	11	27	3	6	1	7	14	.....	3	..
10/10/35	30	2,360,000	1,200	52	14	3	4	..	12	15	.....	2	..
10/11/35	32	2,100,000	900	55	25	2	5	..	2	11	.....	2	..
10/12/35	36	2,670,000	1,200	53	36	3	8	..	..	..	.....	1	..
10/13/35	40	2,720,000	2,900	62	26	5	7	..	..	..	.....	..	..
10/14/35	41	3,200,000	2,200	67	11	2	14	1	3	2	.....	..	..
10/15/35	44	3,100,000	2,100	46	27	9	18	..	..	..	.....	..	..
10/16/35	44	2,650,000	3,300	45	27	2	21	..	2	3	.....	..	..
10/19/35	52	2,770,000	7,500	76	17	..	4	1	..	2	.....	..	..
10/21/35	50	2,780,000	9,000	75	9	2	10	3	1	..	.....	..	..
10/23/35	43	2,610,000	10,600	76	6	..	17	..	..	1	.....	..	..
10/26/35	42	2,300,000	3,000	71	21	2	3	..	..	3	.....	..	..
10/27/35	35	2,000,000	1,800	77	13	3	1	..	1	5	.....	..	..
10/28/35	32	1,900,000	1,750	60	32	4	2	..	2	..	.....	1	..
10/29/35	33	1,960,000	2,100	57	24	4	..	..	3	12	.....	2	..
10/30/35	33	2,350,000	1,500	64	19	1	1	..	5	10	.....	1	..
10/31/35	33	2,100,000	1,200	64	26	..	..	..	4	6	.....	4	..
11/ 1/35	33	1,720,000	1,600	70	18	..	2	..	2	8	.....	3	..
11/ 2/35	34	1,770,000	1,800	80	10	..	..	..	4	8	.....	2	..
11/ 3/35	30	2,010,000	1,500	72	14	..	..	..	..	14	.....	..	..
11/ 4/35	30	2,300,000	1,200	68	14	..	..	..	..	18	.....	..	..
11/ 5/35	30	1,790,000	1,100	72	15	..	..	..	2	11	.....	..	..
11/ 6/35	31	2,010,000	2,000	86	7	..	..	..	1	5	.....	1	..
11/ 7/35	33	2,080,000	1,700	85	13	..	..	..	..	2	.....	..	..
11/ 9/35	31	2,080,000	3,250	70	10	..	..	1	3	16	.....	..	..
11/12/35	30	1,720,000	3,500	80	11	..	..	..	..	9	.....	..	..
11/15/35	25	1,620,000	3,000	75	10	..	..	..	..	15	.....	..	..
11/18/35	15	1,300,000	1,900	75	13	..	..	..	3	9	.....	1	..
11/21/35	10	850,000	1,800	79	9	..	..	..	..	12	.....	..	..
11/23/35	—10	850,000	1,700	73	16	..	..	..	..	11	.....	16	..
11/26/35	—10	1,060,000	3,200	63	29	..	1	..	..	7	.....	28	..
11/28/35	12	1,000,000	4,500	86	10	1	..	..	..	3	.....	8	..
12/ 1/35	—10	850,000	2,450	79	12	2	2	..	..	5	.....	6	..
12/ 4/35	—10	750,000	2,000	61	17	..	..	1	5	16	250,000	3	..

negative for ova, parasites and occult blood. An x-ray film of the chest was essentially negative. X-ray examination of the stomach after a barium sulfate meal was negative. X-ray examination of the colon after a barium sulfate enema showed the descending colon to be narrow, smooth walled and with a loss of haustral markings. X-ray examination of all the long bones, pelvis and skull showed no evidence of bony pathologic changes. Blood cultures were repeatedly negative. Agglutination tests for typhoid, paratyphoid, Brucella melitensis and Bacterium tularense were repeatedly negative. A skin test for tularemia was negative. A biopsy from the sternum was unsatisfactory and one from the left inguinal lymph nodes showed only chronic inflammatory changes.

Although a definite diagnosis was lacking, it was felt that a blood dyscrasia existed. The patient was empirically given liver extract intramuscularly (3 cc. of Solution Liver Extract

Concentrated-Lilly) every other day. Curiously enough the red and white blood cell counts immediately began to rise coincident with a drop in temperature. After nine days of normal temperature a rise in the red blood cell count to 3,810,000, hemoglobin of 51 per cent, white blood cell count of 8,300, and a marked improvement in symptoms, he was discharged, September 12. One week later, September 19, he was readmitted with a recurrence of symptoms, a temperature of 102.4, a red blood cell count of 2,490,000, hemoglobin of 35 per cent, and a white blood cell count of 2,200 with 60 per cent

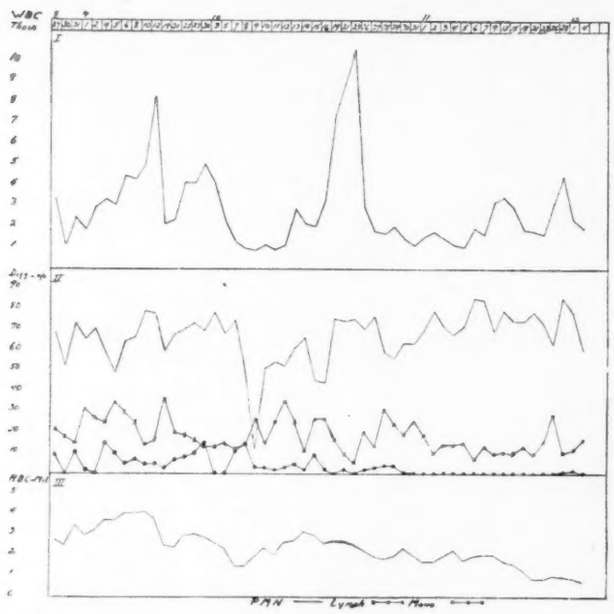

Chart 1.—Graphic demonstration of the blood counts. Only neutrophils, mononuclears and lymphocytes are included in the differential count in this graph.

polymorphonuclear cells, 37 per cent lymphocytes, and 3 per cent mononuclears. At this time there were occasional nucleated red cells and reticulocytes.

His course thereafter for a long time was fairly constant. There were periods of fever, which varied from 100 to 106 F. usually continuous in type but at times remittent, and lasting from seven to thirty-two days. The afebrile periods varied in length from three to eleven days. October 9 and 11 the white blood cell count fell to 900 cells with a serious reduction in the red blood cell count. Liver intramuscularly had been started at the time of his second admission but appeared to be of no value, and from October 9 to October 23 it is noted that he had an eosinophilia varying from 4 to 21 per cent. As he experienced chills and exacerbations of fever after the administration of liver during the latter part of the period of eosinophilia, it was felt that this was due to sensitivity to liver and it was discontinued. A sensitivity test was performed intradermally with liver but was negative. Pentnucleotide was given intramuscularly twice daily from October 8 to October 12, with a slight temporary rise in leukocytes. Four blood transfusions, the first of 400 cc., the others of 200 cc., were given on October 8, 10, 12 and 29. It is noted that on the days after all but one of these transfusions there was a reduction in the white blood cell count. During his course, sternal tenderness developed. A hypostatic pneumonia also developed, from which he recovered. However, he became progressively weaker and cachectic, steadily lost weight, finally passed into a muttering delirium, and died December 7.

During the latter part of his illness, although a definite diagnosis could not be established, it was felt that this was a case of Hodgkin's disease involving the spleen, the abdominal lymph nodes and possibly the bone marrow. These conclusions were reached for two reasons: the first, an atypical Pel-Ebstein or Murchison type of fever; the second, the tendency toward an increase in mononuclear cells and polymorphonuclear cells.

Permission for autopsy was secured and was performed by Dr. D. H. Kaump of the Mayo Clinic. His report follows: The unembalmed body, 163 cm. in length, was estimated to weigh 125 pounds (56.7 Kg.). There was no edema or obesity. There was a grade 1 jaundice and grade 2 emaciation. Both pupils measured 0.4 cm. There was a small scar 3 cm. in length over the anterior portion of the sternum. When the peritoneal cavity was opened, the omentum lay free. There was no free fluid. The coils were smooth and glistening. The epiploic foramen was open and the duodenal folds were present. The liver margin projected 3 cm. below the right costal margin. The diaphragm arched to the fifth rib on both sides. When the pleural cavity was opened, 200 cc. of clear yellow fluid was found in each side. There were a few dense old adhesions at each apex. The transverse pericardium measured 15 cm. and there was 400 cc. of clear straw colored fluid in the sac. The thymus was apparently replaced by fat. The heart weighed 350 Gm. and was a reddish brown with normal fat and no soldier's spots. The consistency was diminished (grade 2). The cut surface was reddish brown and the septum showed no streaking. The appendages, endocardium and valves were normal. The foramen ovale was closed. The coronary arteries showed sclerosis (grade 1). The valve measurements were as follows: aortic valve 6.5 cm., mitral valve 11 cm., tricuspid valve 14 cm. and pulmonary valve 8 cm. On examination of the lungs the right upper lobe was a gray blue with anthracosis (grade 2) and apical scarring (grade 1). There was no atelectasis and the consistency and crepitation were normal. The cut surface was bluish gray and showed normal frothing and no edema. The right middle lobe was essentially the same and the right lower lobe was essentially the same except that the cut surface showed an increase in edema (grade 2). The left upper lobe was essentially the same as the right upper lobe. The left lower lobe was essentially the same as the right lower lobe. There was a diffuse emphysema (grade 2) throughout both lungs. The bronchi and vessels appeared to be normal. The spleen weighed 440 Gm. and was a mottled reddish purple and grayish red. There was an increase in lobulations (grade 2) and no perisplenitis. The consistency was normal and the wrinkling was diminished (grade 2). The cut surface was mottled reddish purple and grayish red. There was an increase in trabeculations (grade 1) and follicles (grade 2). There was a large number of these small grayish red areas of hyperplasia. The liver weighed 2,200 Gm. and was a light tan with a smooth surface and normal consistency. The color of the cut surface was light tan and mottled, with numerous small reddish hemor-

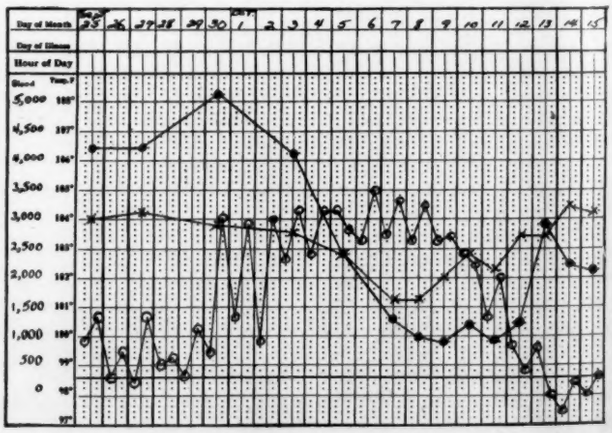

Chart 2.—Although not exactly coinciding, the rise in temperature and fall in red and white blood cell counts and the reverse procedure are shown. Circles denote temperature, x's red blood cells and solid dots white blood cells.

rhagic areas. The markings were distinct. The gallbladder contained 30 cc. of dark greenish black viscid material but was normal. The bile ducts were patent and showed no dilatation. The esophagus was normal except for a number of small linear hemorrhagic areas in the middle third. The stomach, duodenum, jejunum, ileum, colon and rectum appeared to be normal. The pancreas was estimated to weight 100 Gm. and appeared to be normal. Both adrenals were normal. The right kidney weighed 200 Gm. The capsule stripped with difficulty from a translucent light gray surface on which the lobulations and stellate veins were normal. There were no adenomas,

scars or cysts. The consistency was normal. The cut surface was light gray and the markings were distinct. The cortex measured 0.5 cm. and the medulla 2 cm. The peripelvic fat was normal. The calices, pelvis and ureters were all dilated (grade 2). The left kidney weighed 210 Gm. and was essentially similar to the right. The bladder was empty at examination. It was somewhat contracted and thickened. The wall measured 8 mm. in thickness and was firm and fibrous to touch. There was a small amount of hemorrhage of the mucous membrane most marked in the area of the trigon. Both ureteral orifices were patent. The prostate measured 3 by 3 by 2.5 cm. and appeared to be normal on cut surface. The thyroid was normal in size and consistency. The aorta and its large branches were sclerosed (grade 1). The spine was normal in alinement. The periaortic lymph nodes were enlarged (grade 1). The largest of this chain of nodes measured 3 by 2 by 1 cm. These were fairly discrete and were of a light gray waxy appearance. The bone marrow was pyemia and semiliquid in consistency. The anatomic diagnosis was lymphoblastoma (Hodgkin's type); pulmonary congestion and edema with early diffuse bronchopneumonia; bilateral hydrothorax; contracted (grade 2) hypertrophied (grade 2) bladder with mural fibrosis, hydro-ureters bilateral (grade 2) and hydronephrosis bilateral (grade 2); emaciation (grade 2); arteriosclerosis (aorta grade 1, coronaries grade 1).

The report on the microscopic study will be limited to one of the lymph nodes from the abdomen: The normal structure was lost. There was a rather marked increase in the amount of connective tissue, much of which had undergone hyaline change. The remaining lymph spaces were filled with lymphocytes and a second type of cell which was large, slightly irregular and possessed a large pale nucleus in many of which there was a small deeply stained nucleolus. There was some increase in the size of the reticulo-endothelial cells. There were occasional multinucleated cells with a moderate amount of pale cytoplasm. There were occasional eosinophils and a few mitotic figures. The diagnosis was Hodgkin's disease. These slides were also studied by Dr. Arthur Wells of St. Luke's Hospital, Drs. Kernohan and Robertson of the Mayo Clinic and Dr. C. H. Bunting of the University of Wisconsin, all of whom agreed in the diagnosis. Microscopic sections of the spleen studied by Dr. Wells showed a diffuse moderate increase of the interstitial fibrous connective tissue. A few areas had a complete obliteration of sinusoids and much hyalinization, and others were comparatively free from fibrosis. There was a diffuse prominent eosinophilic infiltration throughout the sections. Rare giant cells of the Dorothy Reed type were noted. The diagnosis was Hodgkin's disease.

I sincerely regret that the specimens of bone marrow were unsatisfactory. Dr. Bunting also studied the blood smears and reported that the platelets were large, swollen and numerous.

This, then, represents a case of Hodgkin's disease diagnosed prior to death by reason of the atypical Pel-Ebstein fever and by repeated blood studies. Referring to table 2 it is noted that, in all, fifty-four blood counts were performed. I have already stated that the bleeding time, clot retraction time and clotting time were within normal limits. At times there was a considerable number of immature cells in both red and white groups. In the latter group these cells were members of the granular series. The anemia of 750,000 and 850,000 was extremely grave and with a hemoglobin of less than 10 per cent is worthy of mention. The platelet count, taken twice, varied from 250,000 to 310,000, and on constant study all smears failed to show any reduction in the number of platelets. Despite the absolute lack of mononuclears on occasion, it was felt that there was a tendency for these cells to be increased. If one adds the number of myelocytes and myeloblasts to the neutrophil count, it is found that the number of polymorphonuclear cells is quite above normal.

Chart 1 reveals these counts in graphic form and indicates the relatively high percentage of neutrophils and the tendency toward mononuclear increase and the progressive, severe anemia that existed. In chart 2 the interesting relationship between fever and blood count is observed. It was found that when the temperature rose above normal the red and white blood cell counts fell and, conversely, when the temperature returned to normal the blood elements increased.

SUMMARY

A case of Hodgkin's disease was characterized by atypical Pel-Ebstein fever, a persistent and severe leukopenia and a steady and often extremely marked anemia; prior to death the physical changes gave no suggestion of Hodgkin's disease other than the palpable spleen. I wish to stress the point that had only one blood count been taken an antemortem diagnosis could not have been made. It is evident that the blood count could have been performed when the mononuclears were entirely absent or when they were increased, and also at a time when the immature cells could have led one astray. The continued study indicated a tendency toward an increase in mononuclear cells and polymorphonuclear cells. Also, although the number of platelets was not increased, it may be postulated that in comparison with the other formed elements they were relatively increased. I will make no effort to explain either the leukopenia or the anemia.

CONCLUSION

It is felt that the blood picture is a distinct aid in the diagnosis of Hodgkin's disease and that in this condition, as in blood dyscrasias, a continued study of the blood is of extraordinary importance.

1115 Medical Arts Building.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN

USE OF GASTRIC ANTACIDS

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AND
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This is one of a series of articles written by eminent authorities for the purpose of extending information concerning the official medicines. The twenty-four articles in this series have been planned and developed through the cooperation of the U. S. Pharmacopeial Committee of Revision and THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.—ED.

Antacids are employed primarily to reduce or neutralize the acidity of the gastric secretion, preferably by local action rather than through systemic alkalinizing effects. Gastric acidity is largely due to excess of free hydrochloric acid, but other fermentative acids may also contribute to its production. The condition may be recognized by an examination of the gastric contents or may be surmised from the symptoms noted by the patient. However, the ordinary test meal does not demonstrate excessive acidity as often as does the fractional test meal after the use of histamine.

IMPORTANT FACTS CONCERNING ANTACIDS

Hurst and Stewart point out that both sodium bicarbonate and magnesium oxide are the most powerful stimulants of gastric secretion known, with the exception of histamine. This is based on the work of Crohn and Reiss, who demonstrated by fractional test meals the primary neutralizing effect of these antacids followed by stimulation of acid secretion. It appears that since these alkalis produce an alkaline solution when given in excess whereas calcium carbonate, sodium and potassium citrates and tribasic calcium and magnesium phosphates produce a neutral solution, it is rather the alkaline reaction of the gastric contents than any specific

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property of sodium bicarbonate or magnesium oxide which stimulates the secretion of acid. If these alkalis, therefore, are administered in doses that will not produce complete neutralization, secondary stimulation of secretion need not occur.

CERTAIN METHODS OF INSTITUTING ANTACID TREATMENT

The Sippy treatment for peptic ulcer has as its basis an attempt at complete neutralization of the gastric acidity until healing occurs. The prevention of acid irritation of the ulcer is rational but it is well recognized today that complete neutralization is not necessary and often impossible and that ulcers may heal as well with moderate doses as with large amounts of alkalis. The Sippy powders consist of No. 1, which contains 0.65 Gm. of heavy magnesium oxide and 0.65 Gm. of sodium bicarbonate, and No. 2, which contains 0.65 Gm. of bismuth subcarbonate or calcium carbonate and from 1.3 to 2 Gm. of sodium bicarbonate. One criticism of the Sippy regimen is that the amounts of alkali administered are too large. In fact, some clinicians have discontinued the use of alkalis altogether, a procedure with which we are not entirely in accord because, even though one may dispute the healing effects of alkalis, there can be no doubt that by their use symptoms are relieved and the corrosive effect of the acid at least partly overcome. Others have criticized the use of alkalis on the basis that complete or partial reduction of acidity interferes with gastric digestion; but when one remembers that this interference is only temporary and that the small intestine is capable of continuing the digestion of the contents passed on from the stomach as it does in achylia gastrica, this criticism is without substantial proof. The Sippy plan is logical, since it is much more important to reduce acidity than it is to allow the acid irritation to continue. It would seem, therefore, that unless other means such as carefully managed diet could accomplish what alkalis tend to do, the latter are an important part of therapy in gastric disease.

The following modification in the Sippy powders has been recommended: No. 1 consists of 0.65 Gm. of sodium bicarbonate and 0.65 Gm. of calcium carbonate; No. 2 consists of 0.65 Gm. of calcium carbonate and 0.65 Gm. of Heavy Magnesium Oxide, U. S. P. If bowel action is normally regular or if there is a natural tendency to diarrhea, the heavy magnesium oxide may be replaced by an equal amount of Bismuth Subcarbonate, U. S. P., or powder 1 substituted for powder 2. However, the Sippy powders can also be so regulated for, if diarrhea does develop, the second powder can be substituted for the first as often as may be required or, if constipation occurs, the opposite change can be made. Eusterman and Balfour recommend that one can readily substitute 1.3 Gm. of bismuth subcarbonate or 1.3 Gm. of sodium citrate, or the tribasic phosphates of calcium (Ca_3 $(PO_4)_2$) (Precipitated Calcium Phosphate, N. F.), 1.3 Gm., and magnesium (Mg_3 $(PO_4)_2$), 1 Gm., for the sodium bicarbonate in powder 1 whenever necessary if any unfavorable reactions occur that can be attributed to it.

Winkelstein has recommended a continuous alkalinized milk drip into the stomach to maintain constant neutralization for twenty-four hours. He had demonstrated the high night acidity curves and this seemed a logical method of attack. The solution of milk contained 5 Gm. of sodium bicarbonate to the quart, regulated as a drip so that the patient received 3 liters of milk and 15 Gm. of sodium bicarbonate a day. Theoretically this will neutralize 9 liters of tenth normal hydrochloric acid. Others before Winkelstein have stressed the importance of removing all acid contents from the stomach of the patient on retiring, by means of a stomach tube.

Wosika and Emery administered an alkalinized (0.6 Gm. of calcium carbonate and 2 Gm. of sodium bicarbonate) powdered milk preparation every hour and found it somewhat more successful in neutralizing acidity than the usual Sippy plan. They believe, however, that in the majority of instances the Sippy plan produces complete neutralization but that when the acid was thoroughly controlled a greater quantity of alkali may have been administered than was needed.

Hurst considers milk the most efficient of all alkalis. He does not use the Sippy medication but adds 0.65 Gm. of sodium citrate with magnesia magma to each glass of milk not only because they are both efficient alkalis and neutralize any acid that is already present but also because the sodium citrate combines with the calcium of the milk and thus prevents the rennin from acting on the caseinogen. In this manner curds which act as a mechanical irritant to the ulcer are prevented from forming and the delay in stomach evacuation which might follow is avoided. His second mixture contains 0.3 mg. of atropine sulfate and this is administered twice daily, at 8 a. m. and 3 p. m. Sufficient magnesia magma is given to regulate bowel evacuation; at the same time it is a useful antacid. When heartburn or discomfort is present, 4 Gm. of prepared chalk is given between feedings. He believes that carbonates have the disadvantage of liberating carbon dioxide and he prefers not to use sodium bicarbonate because it produces an excessive rise in acidity after the initial neutralization. Interestingly enough, 15 Gm. of powdered charcoal with water is prescribed at 7 a. m. and in order to minimize the night acidity citrated milk is placed at the bedside to be taken if necessary. Hurst considers bismuth oxycarbonate completely inert and without alkalizing properties.

Crohn points out the familiar fact, with which we are in accord, that combinations of the various antacids seem to exert a better effect than the individual preparations. For example, the rapid action of sodium bicarbonate is continued by the more slowly acting magnesia and bismuth, the latter of which Crohn writes are lacking in untoward secondary effects. For routine use he advises one of the combinations given in prescriptions 1 and 2.

Prescription 1.—*Compound Magnesium Oxide-Bismuth Subcarbonate Powder, Flavored*

		Gm. or Cc.
℞	Peppermint	0.5
	Resorcinol	1
	Bismuth Subcarbonate	4
	Magnesium Oxide	4

Prescription 2.—*Magnesium Oxide and Bismuth Subcarbonate with Belladonna*

		Gm. or Cc.
℞	Extract of Belladonna	0.02
	Magnesium Oxide	0.5
	Bismuth Subcarbonate	0.5
	Sodium Citrate	1

In the first formula, oil of peppermint is added because of its pleasant taste and its carminative action on the gastric mucosa. However, Meyer, Scheman and

Necheles have pointed out that oil of peppermint when used by itself or with a secretory stimulant depresses or inhibits the secretion of acid by the stomach.

GENERAL DISCUSSION OF ALKALIS IN ULCER CASES

As a rule some form of alkaline therapy is indicated in the treatment of peptic ulcer. Usually sodium bicarbonate combined with either bismuth subcarbonate or calcium carbonate or magnesium oxide (heavy or calcined) is prescribed. As we have already pointed out, however, caution must be taken in the use of large doses of these remedies since toxic effects may result after their absorption. Many clinicians are definitely opposed to the use of sodium bicarbonate or magnesia in doses exceeding 0.5 Gm. of either of the ingredients. Furthermore, Crohn has shown experimentally that large doses of alkalis neutralize or depress acidity only temporarily (from a quarter to half an hour), being followed by a secondary hypersecretion of gastric acidity that more than counterbalances the primary neutralizing effects. It is for this reason that the use of neutral salts such as the tribasic phosphate of calcium and magnesium have been recommended because they are not systemic alkalis but act rather locally in the stomach as antacids. They can therefore be used continuously without giving rise to toxic effects, since they are excreted in the intestine and produce no changes in the urine or blood. Moreover, they afford a degree of relief from symptoms in ulcer cases equal to that obtained by the more frequently used soluble and absorbable alkalis. On the other hand, it must be stated that others do not consider neutral salts as having any superiority over the ordinary alkalis. Perhaps no general rule can be formulated in antacid therapy. In our experience, certain individuals have responded to one type of therapy whereas other types have not been given relief. In rare instances, alkalis seem to aggravate rather than relieve the patient's symptoms.

EFFECTS AND MODE OF ACTION OF ALKALIS

Cushny considers that alkalis have no effect whatever on the activity of the secretory glands of the stomach as far as inducing a more rapid secretion of gastric juice is concerned. However, alkalis may affect the juice already secreted, rendering it neutral or even alkaline and, moreover, useless for digestion and disinfection. Nevertheless they are of benefit in cases of hypersecretion because they lessen the amount of free acid present. Dilute solution of the alkalis may overcome pain, eructations and distention by acting as slight irritants to the stomach wall and in this manner increase circulation. This carminative action may be strengthened when carbonates or bicarbonates are employed, owing to the liberation of carbonic acid by the action of hydrochloric acid. Alkalis may also help to render mucus less tenacious and apparently have definite effects on the movements of the stomach. Ordinarily excess of alkali is rapidly excreted in the form of alkaline salts. Nevertheless sodium bicarbonate, which is the most frequently used antacid, may produce alkalosis if given too frequently or in too large doses; and particularly in those cases in which pyloric obstruction or impairment of kidney function is present, constant care must be taken in order to avoid the production of any toxic effect.

Alkalis given with meals, i. e., during the digestive period, do not influence the acid secretion, although if given in large enough quantities they may render the gastric contents alkaline and interfere with gastric digestion. During the period of digestion, however, the presence of food prevents acid irritation; but the presence of alkalis, such as sodium bicarbonate, will later give rise to higher acid values than would be present when this alkali is not taken. Even smaller amounts of alkali may diminish gastric activity by reducing the amount of free acid below the optimum concentration. As Bastedo points out, "it seems that we are dealing with a quantitative chemical neutralization made difficult by the attempt of the stomach to secrete more acid in order to accomplish its digestive function and this in turn requires more alkali. How much alkali is required depends also on the phase of digestion, for there is more acid present at the height of digestion than earlier or later in the digestive process." Bastedo also discusses the importance of the volume of contents in determining the effect of any antacid. The loss of contents through the pylorus as well as the fact that acid is continually being secreted while the amount of alkali is fixed also must be given consideration in determining the effect of a particular antacid. Since the presence of food combines with and absorbs acid, a high acid content may not be productive of symptoms during the digestive period, whereas even a lower level of acidity at the end of digestion may give rise to very distressing symptoms. It seems clear, therefore, that the time for antacid administration is at the end of digestion and in actual practice it is at this period that antacids actually afford most relief. It is believed, Bastedo points out, that the relaxation of the pyloric and cardiac sphincters after the administration of sodium bicarbonate, resulting perhaps from the liberation of carbon dioxide, is an important factor in overcoming acidity, hunger or empty pain. Perhaps this also explains why alkalis are also beneficial even when excessive acidity does not exist.

Meyer and Rubin carried out experiments on the effect of alkalis on experimental ulcer produced by Mann's method and were unable to support the view that alkalis are a factor in aiding the healing of ulcer. On the other hand, Dragstedt and Vaughan found that alkalis in amounts sufficient to neutralize the gastric secretion promote the healing of experimental gastric ulcers produced by a method different from that used by Mann.

INDICATIONS FOR ANTACIDS

Antacids are used primarily to neutralize excessive acid secretion in the stomach. In this way they relieve discomfort and perhaps also diminish the tendency to the development of peptic ulcer. Any mild antacid may be used for this purpose, but the many disadvantages of sodium bicarbonate have already been noted. Magnesium carbonate or soda may be used if a mild laxative action is needed; and if general stimulation is desired, such as in sudden "sour stomach" with headache as well as nausea, aromatic spirit of ammonia is useful. Belladonna and atropine are of value in hypersecretion, especially when the latter is associated with pylorospasm.

Since antacids are so commonly employed for relief of stomach discomfort, it seems logical that they should be administered just preceding the occurrence of pain if this is periodic. If the time of onset of pain cannot be judged, the antacid should be taken simultaneously with its onset. During the digestive period or toward its end, antacids may be beneficial if the discomfort is due to food irritation, distention or pylorospasm.

The symptoms of discomfort or distention may be caused by a purely functional disturbance or it may be due to ulcer, as it commonly is, to cancer or to an inflammatory condition such as gastritis. In any event, antacids bring relief even though it is well recognized that they may only temporarily change the acid content of the stomach. Nevertheless, temporary relaxation of spasm or neutralization of acidity must be of therapeutic value in the healing of ulcer or gastritis or the various spastic conditions. Sodium bicarbonate, although the most commonly employd alkali, has been overused and therefore abused in the treatment of these conditions.

As has already been mentioned, the use of antacids in peptic ulcer is generally accepted not only as a means of neutralizing acidity but also to prevent the irritation and digestion of tissues. It is also essential to continue at least temporarily some form of antacid therapy of those patients who have been operated on. There are many reasons for this caution just as there are reasons for continuing antacid treatment in patients whose ulcers have apparently healed under medical management. There may not be an entire agreement regarding this point, but those who control their ulcer cases with diet alone are far fewer than those who cling to a rational antacid supplementary therapy.

In chronic alcohol gastritis, catarrhal duodenitis and other subacute and chronic gastric catarrhal conditions with excessive mucus formation, a mixture of sodium bicarbonate and sodium phosphate given in hot water about one hour before meals has been recommended. Bourget's mixture is also beneficial in these cases. In gastric hypersecretion, antacids give temporary but not lasting relief from symptoms.

Antacids are used in the gastric neuroses for the relief of heartburn, nausea, hyperesthesia or pain. The usual antacids, such as sodium bicarbonate or magnesium oxide, may be given in doses of from 0.3 to 0.65 Gm. or they may be combined with small doses of oil of peppermint. Bismuth subcarbonate and the neutral salts are also employed. Crohn recommends the preparation of magnesium superoxol, from 0.65 to 1 Gm., as a pleasant and convenient form of alkaline salt to administer. However, it has no advantage over other magnesium salts. Most antacids tend to relieve hyperperistalsis, irritability and spasm and so should be equally valuable in all dyspepsias, and especially in those which are associated with a high acid content, whether the hyperacidity is nervous or reflex in origin or whether it is associated with an ulcer or acid gastritis or whether it is unexplained.

MODE OF ADMINISTRATION OF ANTACIDS

As with other medicinals, there are rules which may be followed in order to administer alkalis properly. If the alkali is soluble it should be dissolved in water or if insoluble mixed with water before ingestion. When prepared in this manner its action is not too rapid and is probably far more soothing to the stomach. All alkalis should be prescribed in small or moderate doses, from 0.3 to 0.65 Gm., and should be administered not directly after the meal but between one and two hours later. Large doses are not more beneficial and only lead to overalkalinization with the secondary untoward reactions. Furthermore, relief of symptoms, intragastric tension and distention and spasm of the pylorus can be best obtained by the smaller doses. Given from one to two hours after meals, that is, toward the end or late in the digestive cycle, alkalis are much less likely to cause a secondary hyperacidity and hypersecretion but, on the other hand, bring about not only a more efficient neutralization of acidity but also the relief of gastric discomfort or heartburn, which usually appear at this stage of the digestive cycle.

PRESCRIPTION 3.—*Saline-Alkaline Mixture*

℞ Sodium Bicarbonate ..... 8 Gm.
Sodium Phosphate ..... 4 Gm.
Sodium Sulfate ..... 2 Gm.

Mix and pulverize.
Sig.: Dissolve powder in a liter (or quart) of cold water and sip slowly until relieved.

Crohn recommends the Bourget saline-alkaline mixture (prescription 3), sipped slowly, as an ideal method of administering alkalis by fractional dosage. The use of a mild aperient salt with an alkaline salt gives an added advantage by providing a laxative effect on the intestinal tract.

TYPES OF ANTACIDS

Thus far, most of our remarks have been general and have referred to antacids of the type represented by sodium bicarbonate. There are others, however, and some of them have been highly recommended for one reason or another. It is now our purpose to discuss these groups and then to refer again to sodium bicarbonate and its related alkalis for individual discussion.

Aluminum Compounds.—Two aluminum compounds, aluminum silicate and aluminum hydroxide, have been employed with apparently good effect, but these results require further confirmation before they can be finally accepted. The neutralizing effect of aluminum silicate is said not to have the disadvantage of producing a secondary rise in acid secretion and it does not cause gas formation as is occasioned by the carbonated alkalis. Systemic disturbances such as alkalosis do not occur. Colloidal aluminum hydroxide is supposed to act by colloidal-chemical absorption and not by chemical neutralization. It, too, produces no systemic reactions such as alkalosis or other toxic symptoms.

Basic Phosphates.—Greenwald in 1923 reported the gastric antacid effect of the dibasic and tribasic phosphates or calcium and magnesium. He also pointed out that since these substances are excreted in the stool and not in the urine they are not systemic alkalis. He regarded overalkalinization of gastric contents and urine as unphysiologic, and since sodium bicarbonate was known to produce these changes he did not consider it as an ideal antacid. Kantor used both the dibasic and tribasic phosphates and found the latter more effective. The calcium salts were slightly constipating and the magnesium salts slightly laxative, and the tendency of the patient to constipation or to diarrhea was recognized as a guide in the choice of the appropriate drug in any particular case. The dose of either compound was from 1 to 6 Gm., three times a day after meals. Kantor was able to conclude from his work that the common symptoms associated with hyperacidity (pain, heartburn, sour belching, distress and gas) were effectively controlled in most cases by these preparations and he thought that they were particularly useful in cases in which prolonged reduction of excessive gastric acidity was deemed advisable. Shattuck, Rohdenburg and Booker also reported favorably on these preparations and, in England, Hurst recommends them in certain cases.

Bismuth Compounds.—Crohn believes that bismuth salts, especially bismuth subcarbonate, although not alkaline in themselves, may be considered as a form of antacid therapy because by actual observation after test breakfasts he observed a depression of acid secretion in most cases. Bastedo, however, believes that the action is a demulcent and protective one, for bismuth salts either take up no acid or combine too slowly to have any gastric antacid effect. Notwithstanding this, bismuth salts are used to lessen hypersecretion and as a demulcent in peptic ulcer cases and also to check nausea, vomiting and gastric irritation. When it is employed in too large doses or over too long a period, bismuth becomes constipating and sometimes when not controlled the degree of constipation may become extremely distressing.

The usual dosage of bismuth salts, subgallate, subcarbonate and the much less used subnitrate because of its toxicity, is from 0.65 to 2 Gm., and magma of bismuth, 4 cc. Hurst directs attention to the fact that 0.3 per cent of hydrochloric acid has no action whatever on bismuth oxycarbonate, which indicates that it cannot possibly exert any neutralizing action on the acid gastric contents. He would therefore discourage its use not only because it has no neutralizing effect but also because it has the disadvantage of rendering the stools black, so that the immediate recognition of slight melena by the patient is made impossible.

Sodium and Potassium Bicarbonates.—According to Bastedo, sodium bicarbonate is a week antacid of its kind but is considered superior and most generally valuable because it is the physiologic alkali of the body. Furthermore, it is soothing to irritated tissues when administered in dilute solution, gives off the carminative and soothing carbon dioxide in the presence of acid, and leaves a weak acid and nonirritation solution of sodium chloride. It also seems to have a special power to relax the pylorus and possibly also the cardia and, being in solution, it may help to dissolve mucus. On the other hand, it may produce alkalosis if administered in large amounts. When administered in ulcer cases, for example, sodium bicarbonate gives immediate relief from pain in most instances. The rapid neutralization of acid, however, is followed by a secondary rise in secretion, as has already been discussed. It has also been pointed out that some of the relief brought about by sodium bicarbonate is due to the effect of distention of the stomach with gas. This, however, may be dangerous, as Hurst and Stewart point out, if an ulcer is near perforation. In moderate doses a mild yet rapid effect may be produced, without so many disadvantages. It is the only soluble antacid in common use for stomach conditions.

Potassium bicarbonate is much less frequently used. Both it and the sodium compound are classed among the "alkali carbonates and bicarbonates." The dose of each is 1 Gm.

Magnesium Salts.—Magnesium oxide is in itself insoluble. It has a laxative effect, which may be of value but prevents the administration of any but moderate doses. The official magnesium antacids are the oxide, carbonate and hydroxide. They all have considerable combining power for acid but are very weak alkalis. Nevertheless they are valuable aids in the treatment of peptic ulcer and hyperacidity. Magnesium oxide has nearly four and one-half times the neutralizing power of an equal weight of sodium bicarbonate. Furthermore, the period of neutralization is prolonged when compared with sodium bicarbonate. There is also no evolution of gas and consequently no gastric distention. However, as with sodium bicarbonate there is a secondary rise in acidity following the initial neutralization.

The average antacid dose of magnesium oxide (light or calcined magnesia) is 0.25 Gm. There is also a heavy magnesium oxide. According to Bastedo, it does not hydrate readily and is thought by many to be of less value than the light magnesia but it is used in powder form because of its smaller bulk. Magnesia magma, or magnesium hydroxide, is administered in doses of from 4 to 10 cc., magnesium carbonate in 0.25 Gm. doses. Bastedo points out that in neutralizing power 1 Gm. of magnesium oxide is approximately equivalent to 2.5 Gm. of magnesium carbonate, 3 Gm. of calcium carbonate, 4 Gm. of sodium bicarbonate and 21 cc. of magnesia magma and that these amounts can neutralize 18 cc. of diluted hydrochloric acid or 600 cc. of gastric contents containing 0.3 per cent of hydrochloric acid.

Calcium Salts.—Both calcium carbonate (chalk) and magnesium carbonate belong to the group of "carbonates of alkaline earths." Calcium carbonate is also insoluble and has a tendency to constipate mildly. It occurs in two forms, precipitated calcium carbonate, a heavy fine powder, and prepared chalk. The dose of either is 1 Gm. It has been shown that calcium carbonate has two thirds of the neutralizing power of sodium bicarbonate and the advantage of not giving rise to any secondary hypersecretion. Loevenhart and Crandall consider that calcium carbonate is the ideal antacid for the following reasons: 1. When suspended in water it is neutral in reaction. 2. It is only a "potential" alkali but it neutralizes the gastric acid, forming calcium chloride and carbon dioxide. 3. It can be given almost ad libitum. If an excess is taken, it passes out in the feces. 4. It apparently has no effect on the activity of the bowel except that, if taken in excess, it increases the bulk of the stool. (Others believe that it has a slightly constipating effect.) 5. When taken in excess it will coat over ulcerated areas and may in this manner afford protection from the action of irritants.

PRESCRIPTIONS

In discussing the powders presented in prescriptions 4, 5 and 6, Rutherford-Darling cautions that if such compound powders as these three are administered they should be prescribed in doses insufficient to effect complete neutralization, so that secondary stimulation is not produced.

PRESCRIPTION 4.—*Powder of Bismuth Carbonate and Chalk*

	Gm.
℞ Bismuth Carbonate	15
Heavy Magnesium Carbonate	45
Sodium Bicarbonate	45
Chalk	45

PRESCRIPTION 5.—*Antacid Powder*

	Gm.
℞ Heavy Magnesium Carbonate	1.3
Chalk	1.0
Sodium Bicarbonate	2.0

PRESCRIPTION 6.—*Aklaline Chalk Powder*

	Gm.
℞ Sodium Bicarbonate	90
Heavy Magnesium Carbonate	240
Chalk	360

We have used prescriptions 7, 8 and 9.

PRESCRIPTION 7.—*Alkaline Peppermint Powder*

		Gm.
℞	Calcium Carbonate	1.3
	Bismuth Subcarbonate	0.65
	Magnesium Carbonate	0.3
	Sodium Bicarbonate	1.0
	Oil of Peppermint q. s.	

PRESCRIPTION 8.—*Small Powder*

		Gm.
℞	Sodium Bicarbonate	20
	Calcium Carbonate	
	Magnesium Oxide āā	4

Make twenty powders.
Sig.: One three times a day, one hour after meals.

PRESCRIPTION 9.—*Large Powder* (for antacid and laxative effects)

		Gm.
℞	Magnesium Oxide	15
	Sodium Bicarbonate	90
	Calcium Carbonate	15

Sig.: 4 Gm. in water three times a day, one hour after meals.

A useful preparation is the soda mint tablet (Tablets of Sodium Bicarbonate, N. F.), which contains sodium bicarbonate and oil of peppermint. The dose is from one to six tablets. The liquid form, known as the soda and mint mixture (Solution of Soda and Mint, N. F.) is also quite popular. It contains sodium bicarbonate 5 per cent and aromatic spirit of ammonia 2 per cent with spearmint or peppermint water. It is a mild antacid and carminative and may be given in doses of 8 cc.

Prescriptions 10 to 14 are commonly used.

PRESCRIPTION 10.—*Saline-Alkaline Mixture*

℞	Exsiccated Sodium Bicarbonate	
	Exsiccated Sodium Phosphate	
	Exsiccated Sodium Sulfate āā	30 Gm.

Sig.: One-half teaspoonful in water before meals.

PRESCRIPTION 11.—*Alkaline-Bismuth Subcarbonate Mixture*

		Gm.
℞	Sodium Chloride	2
	Sodium Bicarbonate	
	Kaolin	
	Bismuth Subcarbonate	
	Heavy Magnesium Oxide āā	15
	Saccharin	0.065
	Oil of Peppermint q. s.	

Sig.: One-half teaspoonful in water after meals.

PRESCRIPTION 12.—*Flavored Alkaline Mixture*

		Gm.
℞	Calcium Carbonate	
	Tribasic Calcium Phosphate	
	Sodium Bicarbonate āā	15
	Saccharin	0.065
	Oil of Lemon q. s.	

Sig.: One-half teaspoonful in water, one hour after meals.

PRESCRIPTION 13.—*Alkaline Gentian Mixture*

		Gm. or Cc.
℞	Tincture of Nux Vomica	12
	Sodium Bicarbonate	12
	Compound Tincture of Gentian	12
	Peppermint Water, q. s. ad	175

Sig.: 8 cc. three times a day in water, after meals.

PRESCRIPTION 14.—*Bourget Mixture*

		Gm.
℞	Sodium Bicarbonate	30
	Sodium Phosphate (dry)	
	Sodium Sulfate (dry) āā	15

(*a*) Sig.: From 4 to 8 Gm. in a glass of hot water on waking.
(*b*) Sig.: From 8 to 15 Gm. in a glass of hot water half an hour after meals.

The alkaline saline waters have been employed in the treatment of chronic gastric disturbances accompanied by hyperacidity. Of these Vichy, Carlsbad and Kissingen water are best known. As a general rule the alkaline mineral waters contain only a small amount of the carbonate and are not to be preferred to pharmacopeial preparations.

One of the many useful drugs is aromatic spirit of ammonia. It is mentioned as a useful reflex stimulant, antacid and carminative. The dosage is 2 cc. freely diluted with water.

Among the official drugs used as gastric antacids are prepared chalk, compound chalk powder, chalk mixture, precipitated calcium carbonate, magnesium oxide, heavy magnesium oxide, magnesia magma, magnesium carbonate, solution of calcium hydroxide, aromatic spirit of ammonia, sodium bicarbonate and potassium bicarbonate.

UNTOWARD REACTIONS OF ALKALIS

1. *Alkalosis.*—Many instances have been recorded in which the administration of large doses of sodium bicarbonate has produced alkalosis with kidney injury and diminished excretion of nitrogen leading to uremia. Bastedo believes there is reason to suspect that in those cases in which alkalosis develops, abnormal factors of elimination and acid base metabolism may be present. Since alkalosis has not been detected following the administration of calcium carbonate or magnesium oxide it is suggested that as a precautionary measure these may be substituted for sodium bicarbonate in those cases in which large quantities of the latter have been used and the urine kept persistently alkaline.

As has been pointed out, the symptoms of alkalosis generally appear between the first and second week after the beginning of the alkaline treatment. As a precautionary measure the use of the tribasic phosphates of calcium and magnesium instead of other alkalis has been advised in those patients who have even a mild degree of renal disease or of pyloric obstruction. The tribasic phosphates act as local antacids without producing systemic alkalinization. In all instances in which the slightest suspicion of the onset of alkalosis arises the regulation of alkali can always be guided by analyses of the plasma carbon dioxide. Since alkalosis has been most frequently observed in patients on the Sippy treatment or in cases of pyloric or upper intestinal obstruction accompanied by vomiting, such plasma determinations are extremely important when these conditions exist. Care must likewise be exercised in cases of hypertension and renal disease. Eusterman and Balfour called specific attention to the observation that ulcer-bearing patients who had chronic nephritis, pyelonephritis, hepatic cirrhosis, arteriosclerosis or hypertension were markedly susceptible to alkalosis.

Alkalosis is manifested by such symptoms as headache, drowsiness, anorexia, nausea, vomiting, muscle ache, nervousness, mental depression, vertigo and aching pain in muscles and joints. Tetany may develop. When such symptoms appear, administration of alkalis must cease at once and appropriate measures instituted to overcome the toxic state. In such cases some form of substitution therapy may be used instead of antacids. These are mucin, kaolin, alumina cream, colloidal kaolin and the tribasic phosphates used cautiously. With sufficient care, it is clear that alkalosis should be the rarest of complications in antacid therapy.

2. *Stone.*—Meyer and Singer reported a case of intermittent pyloric obstruction due to a gastrolith which consisted of magnesium and sodium, following treatment of ulcers with alkalis. This complication, however, is extremely rare.

Another rare complication is the precipitation of phosphatic stones in the urine following alkaline (sodium bicarbonate) therapy with the production of a persistently alkaline urine.

3. *Interference With Digestion.*—There has been much discussion concerning the unphysiologic action of alkalis which reduce gastric acidity and diminish or inhibit gastric digestion. This problem has already been discussed. Moreover, in ulcer cases in which duodenal alimentation is used the stomach does not participate in digestion. Furthermore, not only is digestion adequately carried on by the intestine alone but frequently gastric acidity is alkalinized or neutralized by the oral administration of antacids. This is another proof that overalkalinization or neutralization need not be objected to on the basis of interference with gastric digestion.

4. *Sensitivity to Alkali.*—It has been recognized that some patients are sensitive to almost any alkali, whether systemic absorption occurs or not. On the other hand, neutralization is not readily effected in a certain number of cases, even with the addition of increasing amounts of calcium carbonate or other suitable alkali. In the latter instances the possibility of obtaining a cure is less favorable, yet healing of the lesion may be complete and permanent if the treatment is followed through thoroughly.

5. *Other Untoward Effects.*—The secondary rise in acid secretion following the primary neutralization brought about by certain alkalis has already been discussed. It has been suggested that a catarrhal gastritis may result from the hypersecretion thus produced, but this must be extremely rare if it actually does occur. Rehfuss suggests that excessive gastric secretion associated with night distress may be the result of overalkalinization, representing as it does chiefly the attempt of the stomach to produce acid sufficient to neutralize the enormous doses of alkali administered.

Tetany is also said to have been known to follow the therapeutic administration of sodium bicarbonate.

Finally, Eusterman and Balfour are of the opinion that intestinal irritation caused by the purging effect of magnesium or other alkalis with aperient quality may cause discomfort which is attributed to the ulcer. They also report that fecaliths and chalk balls may form in the sigmoid in cases of constipation in which large amounts of calcium carbonate are being taken of necessity. This gives rise to symptoms of anorexia, abdominal fulness and distress.

CONCLUSION

The important lesson to be derived from this discussion of gastric antacids is the availability of a group of accepted pharmacopeial drugs as well as a supplementary group of medicinals which can be used as substitutive therapy or to augment the desired therapeutic effect of the first group. It therefore becomes apparent that the physician can easily select any of these preparations and vary them according to the specific and individual need of each patient. For that reason, as well as for many others, we recommend that the physician take advantage of the opportunities offered by such sensible prescribing rather than to resort to the use of proprietary remedies, many of which are known to him only by their trade names, whereas the proportion of their ingredients as well as the ingredients themselves are often only vaguely given. Furthermore, such proprietary remedies do not permit of careful proportioning of ingredients to suit the needs of the individual patient.

Council on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COUNCIL ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

FRANKLIN C. BING, Secretary.

(1) SECCO BRAND TOMATO JUICE
(2) PRIDE OF EGYPT BRAND TOMATO JUICE
(3) SWEET VIOLET QUALITY TOMATO JUICE
(4) DEFENDER BRAND TOMATO JUICE

Distributors.—(1) Comstock Canneries, Inc., Newark, N. Y. (2) and (4) Egypt Canning Company, Inc., Fairport, N. Y. (3) Finger Lakes Canning Company, Inc., Pennyan, N. Y.

Packer.—Comstock Canneries, Inc., Newark, N. Y. (Factories at Egypt and East Pembroke, N. Y.)

Description.—Canned tomato juice retaining in high degree the natural minerals and vitamins. Seasoned with salt.

Manufacture.—Choice variety of field-ripened tomatoes are graded, washed, inspected and preheated. Juice is mechanically extracted, heated, salt is added, and the juice is filled into cans, which are exhausted, sealed and processed at 100 C. (Small plants are sprayed with Bordeaux mixture.)

Analysis (submitted by manufacturer).—Moisture 94.0-94.2%, total solids 5.8-6.0%, insoluble solids 0.1-0.5%, soluble solids 5.4%, ash 0.8-0.9%, fat (ether extract) 0.01-0.03%, sodium chloride, 0.7%, protein (N × 6.25), 0.9-1.0%, reducing sugars as invert sugar 4.1-4.4%, sucrose 0.0%, carbohydrates (by difference) 3.4-3.9%, acidity as citric acid 0.4-0.5%.

Calories.—0.18 per gram; 5 per ounce.

Vitamins.—Approximately 80 international units of vitamin C per fluidounce.

SEXTON BRAND SPINACH, WATER PACKED

Manufacturer.—John Sexton & Company, Chicago.

Description.—Canned spinach, packed in water.

Manufacture.—Spinach crowns are cut for uniform stem length, washed, blanched, again inspected and hand filled in cans. The cans are filled with boiling water, exhausted, sealed and processed.

Analysis (submitted by manufacturer).—(Analysis of entire content including liquid): moisture 90.9%, total solids 9.1%, ash 1.2%, fat (ether extract) 0.3%, protein (N × 6.25) 3.5%, crude fiber 1.04%, carbohydrates other than crude fiber (by difference) 3.1%.

Calories.—0.29 per gram; 8 per ounce.

Claims of Manufacturer.—Choice quality spinach packed in water without added sugar or salt. For use in special diets in which sugar or salt is proscribed or in quantitative diets of calculated composition.

DAKOTA MAID FLOUR (BLEACHED)

Manufacturer.—State Mill and Elevator, Grand Forks, N. D.

Description.—A hard spring wheat "first patent" flour; bleached.

Manufacture.—Selected grades of North Dakota hard spring wheat are mixed, washed, dried, scoured, polished, ground thirty-two times, sifted and impurities are removed. The flour is bleached with benzol peroxide (one-half ounce per barrel) and nitrogen trichloride (1½ Gm. per barrel).

Analysis (submitted by manufacturer).—Moisture 15.0%, total solids 85.0%, ash 0.4%, protein (N × 6.25) 11.6%, fat (ether extract) 1.4%, crude fiber 0.3% and carbohydrates other than crude fiber (by difference) 71.3%.

Calories.—3.44 per gram; 98 per ounce.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 13, 1937

WHAT IS AN AMERICAN?

The answer to the question propounded in the title is likely to reflect the narcissism or self idealization of the one who attempts to answer it. The physical anthropologist alone, however, according to a discussion by Hooton,[1] is qualified to view this question objectively and impartially. The anthropologist's data are derived from caliper measurements, indexes, morphologic observations and statistical analysis pertaining to masses of the population. His view, therefore, cannot be so easily affected by human frailty. When applied to civilized nations, in fact, anthropology has a distressing tendency to shatter cherished delusions.

Americans, for the purposes of Hooton's study, were divided into four classes: (1) old Americans, (2) new Americans, both of whom have been born to Americanism, (3) immigrant Americans—those who have achieved Americanism—and (4) Afro-Americans, or those who have had Americanism thrust upon them. The largest group of individuals used for the racial sorting of the survey was a criminal series composed of 5,689 inmates of penal institutions in nine states. The states were selected for the purpose of furnishing representative samples of all the more important racial groups domiciled in the United States. In addition, some 3,000 free citizens in and around Boston were measured to furnish a check sample. Anthropometric data were also compiled on about 6,000 visitors to the Harvard Model Laboratory at A Century of Progress Exposition in Chicago. The primary concern of all the observations was to determine the racial composition of the white population of the United States. The criteria used for the laboratory sorting method were primarily cephalic and combinations of hair color and eye color, combined in certain subgroups with a twofold division of stature or of the nasal index. Nine so-called racial types emerged in a relatively clear-cut fashion and could be statistically validated. These nine groups were (1) the pure Nordic type of pure blond long heads, (2) the pure Mediterranean type of pure brunet long heads, (3) the predominantly Nordic type of near blond long heads, (4) the Celtic type of long heads with disharmonic pigment combinations, (5) the mixed Nordic Mediterranean type of long heads with intermediate but darkish pigmentation, (6) the East Baltic type of pure blond round heads with medium to broad noses, (7) the Alpine type of pure brunet round heads with medium to broad noses, (8) the mixed Nordic Alpine type of round heads with intermediate but lightish pigmentation and medium to broad noses, and (9) the mixed Dinaric type of round heads with intermediate pigmentation and narrow noses.

The proportions of the nine racial types in the three series—criminal, civilian check sample and world's fair visitors—were extraordinarily similar. The ranking physical type in the combined series was the Nordic Mediterranean group. It constituted about 25 per cent of the combined series, ranking first among the criminals and a close second in each of the two civilian series. It was strongest among the native whites of native parentage and seems to be a predominantly British type. Among the criminals it was remarkable because of its high ranking in first and second degree murder and its low ranking in burglary and larceny. In the two civilian series, those who belonged to this type were separated by a wide margin from the criminal group, both occupationally and educationally. The other physical types were similarly studied in some detail but cannot be cited here for lack of space.

As far as the data allow judgment, according to Hooton, the ethnic origins of the several types distinguished are identical or closely similar for the same types in all three of the series. The European antecedents, where ascertainable, confirmed anthropologic tradition as to the existence of certain physical races. No claim can be made, however, that these types constitute, singly, bodies of persons of exactly the same ethnic derivation. It is, however, a remarkable fact that the imperfectly segregated and classified physical types should exist in virtually identical proportions in these three widely divergent series. It is also clear that no anthropologic basis exists for singling out any so-called racial or national group, or religious or linguistic group, for preferment or for condemnation. Anthropologically it is much more rational to segregate and to eliminate the unfit, worthless, degenerate and antisocial members of each racial and ethnic strain in our population so that the substantial merits of the sound majority of each and the special and diversified gifts of its superior members can be utilized.

Professor Boas,[2] who has long been a student of this subject, has recently written briefly on the effects of American environment on immigrants and their descendants—a subject both closely allied to and indistinguishable from the question asked by Professor Hooton. The problem, Boas states, involves the answer to

1. Hooton, E. A.: What is an American? Am. J. Phys. Anthropol. **22**: 1 (Oct.-Dec.) 1936.

2. Boas, Franz: The Effects of American Environment on Immigrants and Their Descendants, Science **84**: 522 (Dec. 11) 1936.

two questions. Knowing the importance of heredity in determining bodily form and function, it is necessary to understand the composition of the immigrant and native populations and their biologic differences; furthermore, it is necessary to differentiate sharply between what is hereditarily and what environmentally determined. Populations have always moved from one climate to another, and distinct cultures have been thrown together. Even more important than the bodily effects of these changes, Boas believes, is the problem of hereditary determination of personality. One method of studying this problem is the proof by motion pictures of the inaccuracy of the common assumption that Americans do not gesticulate. This motor habit, and probably others, seems to be definitely allied to environment and is peculiarly unstable. The study of such peculiarities, he concludes, shows first of all that no race can be treated as a unit but that in every case the individual must be evaluated according to his own characteristics. As far as the aspects studied are concerned, the descent of the individual plays an insignificant part in his behavior, and the organism is so plastic that its physiologic, mental and social behavior follows the pattern of culture with which it becomes identified. It may be seen, therefore, as far as these two studies interlock in the indicated conclusions, that there is complete agreement concerning the lack of anthropologic support for any clear-cut division of characteristics by racial grouping.

THE RÔLE OF ATELECTASIS IN POSTOPERATIVE PULMONARY COMPLICATIONS

Postoperative pulmonary complications occur in from 2 to 4 per cent of all operative interventions. When operations on the upper abdominal region alone are considered, this figure rises to 10 per cent and higher. The mortality from the same cause is given as 0.6, or one in every 200 cases. The view that ether anesthesia, because of its chilling effect on the lung and the increased possibility for aspiration of septic contents from the mouth into the bronchial tree, was largely responsible, was abandoned when studies revealed that the introduction of local and spinal anesthesia did not diminish either the morbidity or the mortality from this cause.

Research on the pathogenesis of the postoperative pulmonary complications resulted in three distinct theories: that of aspiration pneumonitis developed by A. O. Whipple; that of infected emboli supported by Lichtenberg, Wölfler, Cutler and Morton, Cutler and Hunt, and others; and, more recently, that of pulmonary atelectasis. Since William Pasteur in 1910 revived interest in postoperative collapse of the lung, the number of reported cases has risen, so that in 1930 Coryllos[1] believed its incidence to be nearer 50 or 75 per cent.

The most striking clinical and roentgenologic sign of massive collapse of the lung is the unusually high position and immobility of the diaphragm. This led Pasteur and Sir John Rose Bradford to believe that the collapse was due to paralysis of the diaphragm and that this paralysis was a reflex phenomenon. Yandell Henderson[2] emphasized the fact that after an operative intervention there is a loss of tonus involving all of the body musculature. In the thorax this decrease of tonus of the respiratory muscles and particularly of the diaphragm results in such a diminution of the size of the thoracic cavity and such a deflation of the lungs that many minute deaerated areas are produced. He believes that this condition of hypoventilation exists in most cases after an abdominal operation. Churchill and McNeil[3] demonstrated a reduction of the vital capacity to 30 and 50 per cent of the normal in patients following an abdominal operation. Khromov[4] showed that a comparison of a regimen of protracted stay in bed after an abdominal operation with that of leaving bed early reveals that the vital capacity on the latter regimen is affected much less and returns to normal much more promptly. These authors likewise pointed out that there is a direct relationship between the reduction in the vital capacity and the incidence of pulmonary complications.

The second factor, one apparently of determining importance, is the accumulation of mucus in one or another bronchus. The air in the occluded lobe or lung is absorbed, and collapse of the alveoli follows. The clinical course of the massive collapse of the lung, with its almost invariably excellent prognosis, and above all the striking results of the bronchoscopic aspiration, emphasize the importance of the mechanical factor of the occlusion of a bronchus by a mucous plug. Lee, Tucker and Clerf[5] cured a case of postoperative collapse of the lung by bronchoscopic aspiration of the mucous exudate and produced a typical pulmonary collapse in an anesthetized dog by introducing into its right bronchus the material aspirated from the patient. Coryllos believes that postoperative bronchitis, atelectasis and pneumonitis have the same etiology. He bases his assertion on the clinical, pathologic and etiologic similarities of the three conditions and regards them as successive steps of essentially the same process. The two important factors in determining the collapse are the viscid and tenacious mucus in the bronchial tree and the impairment of the natural means of defense: namely, coughing, respiratory movements and ciliary action. The more or less temporary occlusion of a bronchus leads to the absorption of the alveolar gases of the collapsed lung. The

1. Coryllos, P. N.: Postoperative Pulmonary Complications and Bronchial Obstruction, Surg., Gynec. & Obst. **50**: 795 (May) 1930.

2. Henderson, Yandell: Atelectasis, Massive Collapse and Related Postoperative Conditions, Bull. New York Acad. Med. **11**: 639 (Nov.) 1935.

3. Churchill, E. D., and McNeil, Donald: The Reduction in Vital Capacity Following Operation, Surg., Gynec. & Obst. **44**: 483 (April) 1927.

4. Khromov, B. M.: Effect of Leaving Bed Early After Operation on Respiratory Function, Sovet. khir., 1936, No. 9, p. 389.

5. Lee, W. E.; Tucker, Gabriel, and Clerf, Louis: Postoperative Pulmonary Atelectasis, Ann. Surg. **88**: 6 (July) 1928.

further course of atelectasis, according to Coryllos, will depend on the duration of the obstruction and the virulence of micro-organisms contained in the mucous exudate causing the obstruction. The presence of virulent pneumococci will cause pneumonia; the presence of pyogenic organisms may lead to suppuration and the presence of certain fusiform anaerobes to gangrene of the lung. Thus, atelectasis, either patchy, involving small areas or massive, is the forerunner of postoperative pneumonia or bronchopneumonia.

While most clinicians will not accept the theory that pulmonary atelectasis and postoperative pneumonia are two phases of essentially the same process, it appears reasonable to assume from the mass of accumulated evidence that atelectasis is the predominant postoperative pulmonary complication. And since the reduction of the vital capacity and interference with pulmonary ventilation are the two important factors in its production, the prophylaxis as well as the active treatment of the condition is clearly indicated. Among such measures one may mention the preoperative determination of the vital capacity, and in the postoperative period frequent change of posture, pulmonary exercises, hyperventilation with carbon dioxide inhalations suggested by Henderson, judicious administration of sedatives and narcotics sufficient to allay the pain but not to inhibit the cough reflex, avoidance of tight bandaging, and getting the patient up as soon as possible.

Current Comment

GEORGE W. McCOY AND THE U. S. PUBLIC HEALTH SERVICE

The Serums and Vaccines Act of 1902, with subsequent amendments, placed in the hands of the Hygienic Laboratory (now known as the National Institute of Health) the control of serums and vaccines sold in interstate traffic. The medical profession has benefited greatly by this work throughout the years, and especially by the services of Dr. George W. McCoy, its director for more than twenty-one years. Now comes the news that there has been an alteration in the administrative organization of the Scientific Research Division of the Public Health Service which directs such activities as do not conveniently come under the scope of the National Institute of Health. With the increase in scope of the investigative activities, all the research work of the service will be consolidated under the National Institute of Health. As a result of this reorganization, the chief of the Division of Scientific Research, Assistant Surgeon General Lewis R. Thompson, automatically becomes the director of the institute. To Dr. Thompson the change will not be great; in his capacity in charge of all the research work of the Public Health Service he has had intimate contact with the affairs of the laboratory. It is understood that the National Institute of Health is planning the establishment of a center for Public Health Service research activities at Bethesda, Md., and that the plans for the center are maturing rapidly. The change brings the opportunity for Dr. George W. McCoy to return to his favorite study of leprosy, with which his name has long been identified as an investigator. Dr. McCoy has served on international commissions with distinction and has been showered with honors recognizing his value as a bacteriologist and administrator. It requires one of unusual talents to occupy an administrative position that involves direction of research work and at the same time supervision of commercial concerns. In his years with the Public Health Service, Dr. McCoy not only has maintained his high prestige as a research worker but has inspired the manufacturers of biologic products with high regard for the fairness of his decisions and for the efficiency of his department. Dr. McCoy has been a most valuable and cooperative member of the Council on Pharmacy and Chemistry since 1916. THE JOURNAL, speaking for American medicine, expresses to Dr. McCoy its best wishes as he returns to the field of pure science, in which he has already made many noteworthy contributions.

BRITISH COLUMBIA PHYSICIANS REJECT SICKNESS INSURANCE

A letter from A. J. MacLachlan, M.D., registrar of the College of Physicians and Surgeons of British Columbia, states that a ballot conducted among the members of the college on the question of whether or not they were in favor of working under the proposed plan of health insurance resulted in a vote of 619 against the plan and 13 in favor. The press announces that the premier, who was in Ottawa when the vote was received, wired instructions that collections under the act be postponed sine die and that the whole situation will be reviewed on his return from the East. This should suffice as a reply to those who said that the British Columbia scheme was adopted with the approval of the physicians of the province and that the first system of sickness insurance in North America was about to go into operation.

THE CULTS DEMAND NEW LEGISLATION

Congress and the forty-four state legislatures now in session, as will be seen under the heading Medical Legislation in the Organization Section of THE JOURNAL are busy with legislative proposals far more numerous than those in previous years. The causes of the deluge are obvious. Legislation is necessary to enable the states to avail themselves of the largesses offered by the federal government through the Social Security Act. The economic and social unheavals caused by the depression call for corrective measures. Outmoded and otherwise inadequate legislation needs revision. Tremendous problems with respect to revenue demand attention. Intelligent action on these matters will require all the time of the various legislative bodies. What mockery to have the cult practitioners of the healing art interject their selfish proposals at such a time. Possibly they do so in the hope that busy legislatures will pass without adequate discussion measures that will especially

benefit their personal interests. The cult proposals fall into three classes: (1) to force governmental and tax-exempt hospitals to permit all practitioners of the healing art, no matter whether they are physicians or practitioners of bizarre cults, to practice within their confines; (2) to authorize osteopaths, chiropractors, naturopaths and other substandard practitioners to care for, at the employers' expense, workmen injured in the course of their employment; and (3) to force public officials, charged with the duty of furnishing medical care to indigents and other persons on relief rolls or unable to pay for such services, to permit cultists to treat such persons at public expense. Bills to force hospitals to admit cultists to practice in them are pending in twelve states. None of them have as yet been reported out of committee, but there is always the danger that one or more of them will be enacted. The threat which these bills offer certain hospitals is obvious. Proposals to permit cultists to render services in workmen's compensation cases are pending in Congress and in two states; similar proposals may be expected in other states before the present legislative sessions are ended. A law has been enacted in Oklahoma this year which in effect permits osteopaths to treat indigents at public expense. A proposal has passed the North Dakota house to permit licensed adherents of any cult to treat such cases, and a similar proposal has been killed in New Hampshire. The fate of bills of this type rests to a great extent on the presence or absence of vigorous opposition on the part of the medical profession and its members and on the ability of the medical profession to convince legislators of the dangers inherent in such bills. In view of the baneful effect on the public health which the enactment of such measures would have, it is the duty of the medical profession to oppose such legislative activities energetically. The public should certainly discourage such waste of their legislators' time.

"IS MILK CANCER'S ALLY?"

In an editorial a few weeks ago THE JOURNAL condemned the editors of *Esquire* and *Coronet* for printing articles in the medical field without scientific background. Their ignorance in accepting and publishing such articles as they have published on the glands and on autotherapy was a sort of unfortunate, supercilious or silly ignorance. Now in the March issue of *Coronet* they lead off with an article entitled "Is Milk Cancer's Ally?" that betrays such a broad and comprehensive ignorance of milk and of cancer that one is stimulated to wonder as to the mental age of both editors and author of this publication. Here is the old argument that modern civilized man died of cancer but the American Indian did not die of cancer. The answer is of course that modern civilized man has a life expectancy of some sixty years at birth whereas the life expectancy of the Indians was about thirty years at birth. The Indians simply did not live long enough to die of cancer. More than 90 per cent of deaths from cancer occur in persons over 40 years of age. The Indians died of infectious diseases, exposure and other Indians. The same argument has been made with relation to the eating of white bread versus the eating of whole grain. It might just as well be made with relation to automobiles. The Indians had no automobiles; hence the Indians did not die of cancer. Some preposterous arguments are made to show that cancer rates are higher in the states using the most milk. It may easily be shown that life expectancy is longer in the states using most milk because of better nourishment in those states. In some small type at the end of its article *Coronet* affirms its seriousness in presenting this article; this affirmation adds insult to injury. There is evidence that the article has already produced fear in the minds of some readers who do not stop to remember that neither the author of the article nor the magazine that prints it has the slightest scientific standing.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

Information concerning new medical legislation in various states appears in the Organization Section of The Journal.

ARKANSAS

Dr. Vinsonhaler Retires as Dean.—Dr. Frank Vinsonhaler, since 1927 dean and professor of medical ethics at the University of Arkansas School of Medicine, Little Rock, has announced his retirement. He will be succeeded by Dr. Silas C. Fulmer, professor of medicine and associate dean of the school. Dr. Vinsonhaler was born in Graham, Mo., in 1864 and graduated from Columbia College of Physicians and Surgeons, New York, in 1885. He was for many years professor of ophthalmology at Arkansas and engaged in private practice in Little Rock. He retired from practice in 1934 to devote full time to his duties at the medical school. He was president of the Arkansas Medical Society, 1900-1901, and in 1933 was awarded a medal by Columbia University for conspicuous service rendered to the university. Dr. Fulmer graduated from Tulane University of Louisiana School of Medicine, New Orleans, in 1922.

CALIFORNIA

Special Meeting in Honor of Guests.—The Los Angeles County Medical Association held its meeting January 25 in honor of the guests of the sixth annual midwinter clinical course, given by the Research Study Club of Los Angeles. The speakers were Drs. Edward Jackson, Denver, on "The Share of General Medicine in Preventing Blindness"; Felix R. Nager, Zurich, Switzerland, "The Mental Effect of Deafness," and Meyer Wiener, St. Louis, "Limitations in the Field of Ophthalmology for the Man in General Practice."

COLORADO

Midwinter Graduate Clinics.—The Colorado State Medical Society held its annual midwinter graduate clinics in Denver, January 21-23. Sessions were held at the Denver General, St. Joseph's, Children's, St. Luke's and Colorado Psychopathic hospitals, and the Cosmopolitan Hotel. The speakers included:

Dr. Arthur E. Hertzler, Halstead, Kan., Cardiotoxic Goiter.
Drs. John C. Mendenhall and Thomas D. Cunningham, Treatment of Bronchial Asthma by Injection of Iodized Oil.
Dr. Charles J. Lowen, Massive Collapse of the Lung.
Dr. Harold R. McKeen, Gallbladder Disease in Relation to Cardiac Lesions.
Dr. Paul R. Weeks, Radiation in Treatment of Malignancy of Head and Neck.

Society News.—At a meeting of the Mesa County Medical Society in Grand Junction, January 19, Dr. Galen M. Hover, Grand Junction, discussed the treatment of gonorrhea and Dr. Gordon G. Feldman, Grand Junction, the treatment of common skin diseases.——The Fremont County Medical Society was addressed in Florence, January 25, by Dr. Aurel Goodwin,

Chandler, on "Medicine, Metaphysics, Psychiatry and Cults." Dr. Alexander D. Waroshill, Florence, presented a case report on "Hemolytic Degeneration of the Blood in a Case of Influenza."——Dr. Jack G. Hutton, Denver, discussed the diagnosis and treatment of the twelve most common skin diseases seen in general practice before the Arapahoe County Medical Society, Englewood, January 25.——The Medical Society of the City and County of Denver was addressed, March 3, by Drs. Harry Gauss on "Gastro-Intestinal Symptoms of Cardiovascular Origin"; Joseph R. Plank, "Mesenteric Lymphadenitis," and James R. Jaeger, "Newer Conceptions of Sciatica," with motion picture demonstration. Dr. Siegfried J. Thannhauser, Boston, conducted a diagnostic clinic before the society, February 2.

CONNECTICUT

Appointments to State Department of Health.—Dr. Franklin M. Foote, Elizabethton, Tenn., has been appointed chief of the division of local health administration of the Connecticut State Department of Health. He succeeds Dr. Benjamin G. Horning, who was appointed health officer of Hartford. Dr. Martha L. Clifford, assistant director of the bureau of child hygiene, has been named director of the department, and Dr. Martha A. O'Malley, Waukon, Iowa, has been made a member of the bureau staff. Dr. Foote graduated from Yale University School of Medicine in 1933 and from the school of public health in 1935, and Dr. O'Malley took her medical degree at the State University of Iowa College of Medicine, Iowa City, in 1933. Dr. Clifford graduated from the University of Colorado School of Medicine, Denver, in 1933.

DELAWARE

Hospital News.—The new $104,000 addition to the Brandywine Sanatorium at Marshallton was opened January 25. Fully equipped, the new addition is valued at $120,000 and provides accommodations for fifty new beds, making the total bed capacity of the institution 160.

DISTRICT OF COLUMBIA

Annual Graduate Clinic.—The fifth annual graduate clinic of the George Washington University School of Medicine, Washington, was conducted February 20. The following program was presented:

Dr. Roger M. Choisser, Sudden Death: A Clinical Pathologic Consideration with Case Presentations.
Dr. William E. Clark, Duodenal Ulcer.
Dr. Jacob Kotz, How to Examine a Female Endocrine Patient.
Dr. Harry A. Davis, Cancer of the Thyroid.
Dr. Elijah W. Titus, Practical Considerations in Gynecologic Practice.
Dr. Walter A. Bloedorn, Relation of Clinician and Pathologist.
Dr. Francis R. Hagner, Results in Operations for Sterility.
Dr. William H. Jenkins, Autoplastic Facial Nerve Graft.
Dr. Herbert P. Ramsey, Factors in Marital Pathology.
Dr. Guy W. Leadbetter, The Mechanics of Traction in Fractures.
Dr. George Louis Weller Jr., Treatment of the Anemias.
Dr. William Ross Morris, A Method of Completing Unsuccessful Pneumothorax.
Dr. Harry F. Dowling, Present Day Status of Pneumonia Therapy.
Dr. Margaret M. Nicholson, Congenital Heart Disease.
Dr. Samuel M. Dodek, Management of the Persistent Occipitoposterior and Arrested Transverse Positions.

ILLINOIS

Physicians Honored.—The Madison County Medical Society conferred honorary membership on Drs. Adam H. Oliver, Edwardsville; Charles R. Kiser, Madison, and Leonard Schreifels, Granite City, at a recent meeting. All are 70 years or more of age. Dr. Schreifels was president of the society in 1929 and Dr. Kiser in 1919.

Immunization of Parochial School Children.—A campaign to immunize children against diphtheria was projected in eighty parochial schools in the diocese of Belleville by the school authorities and the Catholic Physicians' Guild. Children who paid no tuition were inoculated without charge, the others going to their family practitioners. The parochial school physician gave the free inoculations and supervised the program. In the future all children entering school for the first time will have medical examinations.

Chicago

Society Moves Offices.—The Chicago Medical Society will have its headquarters in the Michigan Boulevard Building, 30 North Michigan Avenue, after April 1. The society will occupy four rooms on the fifteenth floor of the building.

Malaria Traced to Narcotic Addicts.—Six deaths from malaria have been reported among narcotic addicts since January 1, according to the newspapers. Investigation of the death from this cause of Earl Davidson, 27 years of age, in the County Hospital, February 8, revealed that he had served a year in Leavenworth Penitentiary for possessing narcotics. At his home a hypodermic needle and narcotics were found. An outbreak of malaria among a group of narcotic addicts who admitted they used the same syringe was reported in THE JOURNAL, Feb. 9, 1935, page 481.

Dr. Hektoen to Deliver First Fenger Lecture.—Dr. Ludvig Hektoen will deliver the first Christian Fenger Lecture of the Institute of Medicine of Chicago and the Chicago Pathological Society at a joint meeting with the Society of Medical History of Chicago and the Chicago Surgical Society, March 26. His subject will be "Early Pathology in Chicago and Christian Fenger." The lectureship has recently been established under the joint auspices of the institute and the pathologic society in honor of Dr. Christian Fenger, who was the first teacher of pathology in the Middle West. He was born in Copenhagen, Denmark, Nov. 3, 1840, and died March 7, 1902. He served as professor of clinical surgery at the College of Physicians and Surgeons, Chicago Medical College and Rush Medical College.

INDIANA

Secretaries' Conference.—The annual conference of the county medical society secretaries will be held March 21. The conference was scheduled for January 31 (THE JOURNAL, January 16, p. 212), but was postponed because of flood conditions.

Society News.—Dr. Albert C. Furstenberg, dean, University of Michigan Medical School, Ann Arbor, discussed "Acute Infections of the Mouth, Throat and Cervical Region" before the Fort Wayne Medical Society, February 2.——Dr. Philip S. Hench, Rochester, Minn., addressed the Indianapolis Medical Society, February 23, on "Diagnosis and Treatment of the Various Types of Chronic Rheumatism."——Dr. John H. Warvel, Indianapolis, addressed the Northeastern Indiana Academy of Medicine in Kendallville, January 28, on "Protamine Insulin."

KANSAS

Cancer Control Program.—The Kansas Medical Society will conduct its second annual program on cancer control, March 15-20. Sessions will be held for physicians in the evening and for the public in the afternoon in Emporia, Hutchinson, Garden City, Colby, Concordia and Kansas City. The speakers will be:

Dr. Burton T. Simpson, director, New York Institute for Study of Malignant Disease, Buffalo, N. Y.
Dr. Louis C. Kress, assistant director of cancer control at the institute.
Dr. Frank L. Rector, Evanston, Ill., field representative of the American Society for the Control of Cancer.

Also cooperating in the series are the Northwest Kansas Medical Society and the Lyon, Reno, Cloud, Finney and Wyandotte county medical societies.

KENTUCKY

Special Studies in Mental Hygiene.—The U. S. Public Health Service is making special studies of mental hygiene in Fayette and Scott counties with the ultimate object of determining whether the situations influencing the evolution of mental disorders group themselves into etiologic categories. Another objective is to determine whether there is a pattern approach to this problem from the standpoint of the place mental hygiene might occupy in a regularly constituted health organization. The work is directed by Dr. Lieuen M. Rogers of the U. S. Public Health Service and is conducted in cooperation with the state health department, the health departments of Fayette and Scott counties and the University of Kentucky, Lexington.

MAINE

Society News.—Dr. Chester M. Jones, Boston, discussed "Treatment of Liver Disease" before the Cumberland County Medical Society, February 26.——At a meeting of the York County Medical Society in Sanford, April 7, Dr. Stephen A. Cobb will speak on the injection treatment of hernia.——The Kennebec County Medical Association was addressed in Waterville, February 18, by Dr. Frank B. Bull, Gardiner, on cancer and Drs. John O. Piper, Waterville, and Richard B. Cattell, Boston, on thyroid from the medical and surgical points of view, respectively.

MARYLAND

Personal.—Dr. William J. French, health officer of Anne Arundel County, has been made an honorary member of the Howard County Medical Society.——Dr. Lewis H. Weed, professor of anatomy, Johns Hopkins University School of Medicine, Baltimore, will deliver an advanced course of lectures in anatomy at the University of London this spring on "The Cerebrospinal Fluid."

Society News.—The Baltimore City Medical Society was addressed January 8 by Drs. Walter L. Winkenwerder and Leslie N. Gay, "Clinical Course and Treatment of Allergic Rhinitis"; Lawrence R. Wharton, "Criteria of Cure in Gonorrhea in Women," and James C. Owings and Otto C. Brantigan, "Intraspinal Injection of Absolute Alcohol for the Cure of Intractable Pain."——At a meeting of the Historical Society of the University of Maryland, January 19, Drs. George Carroll Lockard and James M. H. Rowland, Baltimore, discussed "Medicine in Baltimore in the Early Part of the Nineteenth Century and the Organization of the University of Maryland."——Dr. Joseph E. Moore, Baltimore, addressed the Frederick County Medical Society, recently, on "The Control of Syphilis in Maryland."

MASSACHUSETTS

New Health Commissioner for Boston.—Dr. Henry F. R. Watts, Dorchester, has been appointed health commissioner of Boston, succeeding the late Dr. William B. Keeler. Dr. Watts graduated from Harvard University Medical School in 1894. He is 67 years of age. According to the *New England Journal of Medicine,* Dr. Watts has been a member of the health department since 1909 and for many years was a member of the faculty of Tufts College Medical School.

Lowell Institute Lectures.—Dr. Lewis W. Hackett, assistant director of the International Health Division, Rockefeller Foundation, and representative of the Rockefeller Foundation in Italy and Albania, is giving the current series of free public lectures sponsored by the Lowell Institute, Boston, in Huntington Hall. The series deals with "Man Against Malaria in Southern Europe" and the individual titles are "The World War and Malaria," "The Malaria Puzzle in Europe," "The Solution of the Problem," "Modern Strategy in Malaria Control," "The Albanian Experiments" and "Land Reclamation in Italy." The lectures opened February 2 and are being given Tuesdays and Fridays.

MICHIGAN

Superintendent Appointed.—Dr. Donald M. Morrill, director of Blodgett Memorial Hospital, Grand Rapids, has been appointed medical superintendent of the Receiving Hospital, Detroit. He assumed the position March 1. In a recent competitive examination for the position, Dr. Morrill received a rating of 96, the highest in the group. He graduated from the University of Michigan Medical School, Ann Arbor, in 1918. He served as chief resident at the University Hospital and later as assistant superintendent.

Society News.—Dr. George W. Crile, Cleveland, addressed the Detroit Philosophical Society, February 19, on "The Interpretation of Man."——At a meeting of the Essex County Medical Society in Windsor, February 2, Dr. Frank A. Kelly, Detroit, spoke on "Hernia, with Special Reference to Injection Treatment."——Dr. William S. Reveno addressed the staff of Highland Park General Hospital and the Highland Park Physicians' Club, February 4, on "Medical Management of Hyperthyroidism."——At a meeting of the Macomb County Medical Society, January 18, Dr. Bernhard Friedlaender, Detroit, discussed "Chronic Endocervicitis, Its Significance and Rational Treatment."——At a meeting of the Muskegon County Medical Society in Muskegon, February 26, Dr. William R. Cubbins, Chicago, spoke on "Abdominal Injuries."——The Detroit Pediatric Society was addressed February 3 by Dr. Herman L. Kretschmer, Chicago, on "Surgical Lesions of the Genito-Urinary Tract in Infancy and Childhood."——Dr. Frederick J. Taussig, St. Louis, addressed the Wayne County Medical Society, Detroit, March 1, on "The Legal and Social Control of Induced Abortion." Dr. Ambrose L. Lockwood, Toronto, addressed the surgical section of the society, February 22, on "The Surgical Dyspepsias."

MINNESOTA

Dr. Maxcy Appointed a Scientific Director.—Dr. Kenneth F. Maxcy, professor and head of the department of preventive medicine and public health, University of Minnesota School of Medicine, Minneapolis, has been selected as one of the scientific directors of the International Health Division of the Rockefeller Foundation. The appointment, effective January 1, is for three years. Dr. Maxcy graduated from Johns Hopkins University School of Medicine in 1915 and represented the U. S. Public Health Service at the malaria conference of the League of Nations in Geneva in 1928. Prior to his appointment at Minnesota, Dr. Maxcy was professor of preventive medicine and bacteriology at the University of Virginia School of Medicine, Charlottesville.

MISSOURI

Centennial Celebration Postponed.—The St. Louis Medical Society will celebrate its one hundredth anniversary April 5-7 instead of March 22-23 as previously announced. The program will include a reenactment of the first meeting, portrayed from the original minutes in the archives of the society and written by Dr. Arthur W. Proetz, an account of the society's history by Dr. James Archer O'Reilly, and a discussion of the "Aims and Accomplishments of Medical Societies and Ours in Particular" by Dr. Malvern B. Clopton. Tuesday evening the speakers will be Drs. Major G. Seelig on "Medical Progress in the Last One Hundred Years" and Amand N. Ravold, "Our Library." The woman's auxiliary will present a play by Byron B. Boyd entitled "Mushrooms Coming Up." Dr. R. Emmet Kane will be toastmaster at the dinner Wednesday evening in the Gold Room of the Jefferson Hotel, and the speakers will include Dr. Robert E. Schlueter on "The Art of Medicine"; Rev. Martin O'Malley, D.D., "The Great Physician," and Charles M. Hay, LL.D., "The Doctor and the State." Memorabilia of the society will be on exhibition during the centennial.

NEW YORK

Theobald Smith Memorial Laboratory to Be Dedicated.—A new laboratory for the departments of physiology, pharmacology and experimental surgery at Albany Medical College, Union University, Albany, will be dedicated March 19 to the memory of the late Dr. Theobald Smith, who was an alumnus of the college. Dr. Thomas Ordway, dean at Albany, will give the principal address at an afternoon ceremony, at which a plaque of Dr. Smith will be unveiled. At an evening assembly Dr. Charles R. Stockard, professor of anatomy, Cornell University Medical College, New York, will deliver an address on "The Spirit of the Laboratory." The new laboratory was remodeled from the old Albany County Hospital, according to a newspaper account. Dr. Smith, who has always been regarded as the "outstanding alumnus of the school," was a native of Albany and graduated from the medical college in 1883. He wrote a noteworthy thesis there on "Cell Activity in Health and Disease" and received a prize for obtaining the highest grade in the final examinations, says an announcement. Through his long career as professor of comparative pathology at Harvard University Medical School and head of the division of animal pathology at the Rockefeller Institute for Medical Research, Dr. Smith remained in touch with Albany Medical College and was twice president of the alumni association. He died Dec. 10, 1934.

New York City

Personal.—Dr. Robert P. Ball, Chattanooga, Tenn., has been appointed assistant professor of radiology at Columbia University College of Physicians and Surgeons.——Dr. Alan Gregg, New York, of the Rockefeller Foundation, addressed the Listerian Society at King's College Hospital, London, February 10, on research in psychology.

Harvey Lectures.—Dr. Thorvald Madsen, director of the Serum Institute, Copenhagen, Denmark, delivered the fifth Harvey Lecture of the current series at the New York Academy of Medicine, February 18. His subject was "The Scientific Work of the Health Organization of the League of Nations." Dr. Herbert S. Gasser, director of the Rockefeller Institute for Medical Research, will deliver the sixth lecture March 18 on "The Control of Excitation in the Nervous System."

Dr. Curran Appointed Dean at Long Island.—Dr. Jean A. Curran, who has recently made a survey of hospital internships and residencies in New York, has been appointed dean of Long Island College of Medicine, Brooklyn. Dr. Curran fills the vacancy created by the death of Adam M. Miller, M.A., who was dean from 1922 to his death in 1935. Dr. Wade W. Oliver, professor of bacteriology, has been acting dean. Dr. Curran was graduated from Harvard University Medical School, Boston, in 1921 and after a two year internship at Brooklyn Hospital spent six years in China. He returned to the United States seven years ago and for some time taught at New York University College of Medicine. Since 1934 Dr. Curran has been engaged in the hospital survey under the auspices of a special committee representing the New York Academy of Medicine and the five medical schools in New York, the final report of which is in process of completion.

Society News.—Drs. Thomas Grier Miller, Philadelphia, and Edward C. Reifenstein, Syracuse, addressed the National Society for the Advancement of Gastro-Enterology, January 26, on "Factors in the Maintenance of Physiologic Conditions Within the Small Intestine" and "Lymphosarcoma of the Gastro-Intestinal Tract" respectively.——Drs. Bernard Glueck,

Ossining, and Herman O. Mosenthal addressed the New York Endocrinological Society, January 27, on "Insulin Treatment of Schizophrenia" and "Protamine Insulin: Its Clinical Application" respectively.——At a meeting of the New York Surgical Society, February 27, Dr. Paul C. Morton spoke on "Carcinoma of the Rectum."——Members of the faculty of Temple University Medical School, Philadelphia, presented the program of the New York Cardiological Society, January 28, as follows: Drs. Charles L. Brown, on "The Urinary Cast Count in a Study of Mercurial Diuretics; Experimental and Clinical Observations"; Joseph B. Wolffe, "Angina Pectoris: Newer Therapeutic Approach," and William Wayne Babcock, "Surgical Treatment of Cardiovascular Diseases."

OHIO

Dr. John Honored.—Dr. Henry J. John, Cleveland, received the Eisenman Award of the Cleveland Jewish Welfare Federation at the annual meeting of the organization February 4 in recognition of his work for diabetic children in Cleveland. Dr. John established a summer camp for these children at his estate in Geauga County several years ago, the first of its kind. The award of $750 will be used for the camp, it was announced. Dr. John was graduated from Western Reserve University School of Medicine in 1916.

Alumni Assembly at Ohio State. — Medical conferences and a graduate assembly were presented at Ohio State University College of Medicine, Columbus, March 4-6, to celebrate the one hundred and third anniversary of the founding of Willoughby Medical College, the original school from which the present one developed. Thursday, March 4, was devoted to an open house at the college of medicine, during which demonstrations were open and physicians of the state were invited to confer with the clinical teachers. Friday a program was presented by numerous members of the faculty, and in the evening the Alpha Omega Alpha Lecture was given by Dr. Henry E. Sigerist, William H. Welch professor of the history of medicine, Johns Hopkins University School of Medicine, Baltimore, on "Early Medical History in the United States." Saturday morning there were presentations at University Hall until 10:45 o'clock, when a new outpatient building was dedicated. Speakers at the dedication were Drs. Charles Gordon Heyd, New York, President of the American Medical Association; Gatewood and Arthur C. Bachmeyer, Chicago, and Charles W. McClure, Boston. Reunions and class luncheons were held at noon at the Deshler-Wallick Hotel. Dr. Henry W. Lehrer, Sandusky, president of the alumni association, presided and Drs. John H. J. Upham, dean of the college of medicine and President-Elect of the American Medical Association, and John B. Alcorn, Columbus, president-elect of the Ohio State Medical Association, were presented. Saturday afternoon the program was given at the St. Francis Hospital, with Dr. McClure as the guest speaker, on diseases of the liver. Arrangements for the meeting were made by Dr. Upham; Dr. Lehrer and other officers of the medical alumni association, and a committee of which Dr. Russel G. Means, Columbus, was chairman.

PENNSYLVANIA

Society News. — Drs. Marc W. Bodine and Robert C. Bastian, Williamsport, addressed the Lycoming County Medical Society, Williamsport, February 12, on "Surgical Phases of Peptic Ulcer" and "Pathologic Conditions of the Paranasal Sinuses" respectively.——Dr. Guy M. Nelson, Philadelphia, addressed the Montgomery County Medical Society, Norristown, March 3, on "The Gallbladder Problem."——A symposium on therapeutics was presented at a meeting of the Fayette County Medical Society, Uniontown, February 4, by Drs. Ralph L. Cox, Starjunction, on drugs that induce sleep; John B. Hibbs, Uniontown, drugs that induce diuresis, and Charles Franklin Smith, Uniontown, drugs that relieve or prevent itching.——Dr. John Lansbury, Philadelphia, addressed the Lebanon County Medical Society, February 9, on diabetes.

Philadelphia

Dr. Sakel Lectures.—Dr. Manfred Sakel, Vienna, Austria, gave a special lecture on "The New Insulin Treatment of Mental Disease" at the Institute of the Pennsylvania Hospital, February 19.

Fire at University Hospital.—Fire damaged severely the roof and the fourth floor of the D. Hayes Agnew Pavilion of the Hospital of the University of Pennsylvania, February 24. Seventy-eight patients were removed to safety and movable equipment was saved. It was estimated that the damage to the building and heavy equipment was about $100,000. The origin of the fire was not determined, but it was believed to be a short circuit in electric wiring.

County Society Secretary Dies.—Mr. Franklin M. Crispin, executive secretary of the Philadelphia County Medical Society for the past thirteen years, died February 7, aged 60. Mr. Crispin had been associated with the society for twenty-five years. He was a native of Philadelphia and attended Princeton University. He was at one time advertising manager of *Forum* and treasurer of the Philadelphia Grand Opera Company, according to newspaper accounts.

Society News. — Dr. George P. Müller has been elected president of the College of Physicians of Philadelphia; Dr. Edward B. Krumbhaar, vice president, and Dr. James Harold Austin, secretary.——The subject of discussion at the meeting of the Philadelphia County Medical Society, March 10, was "Abdominal Quadrants," with Dr. Eldridge L. Eliason speaking on surgical aspects and Dr. Edward J. G. Beardsley on medical aspects.—— Drs. George M. Coates and William Gordon presented a paper on "Abscess of the Epiglottis" and Dr. Charles E. Towson, "Aural Complications of Pneumonia in Children" at a meeting of the Philadelphia Laryngological Society, March 2.——Speakers before the Philadelphia Roentgen Ray Society, March 4, were Drs. Richard T. Ellison, on "Mediastinal Hernia"; George J. Willauer, "Internal Pneumolysis in the Treatment of Pulmonary Tuberculosis," and Richard H. Meade Jr., "Value of the Roentgen-Ray Examination in Thoracic Surgery."——Dr. Baldwin L. Keyes, among others, addressed the Philadelphia Pediatric Society, February 9, on "Visceral Symptoms in Acute Anterior Poliomyelitis."

Pittsburgh

Society News. — Dr. Gilbert J. Thomas, Minneapolis, addressed the Pittsburgh Urological Society, March 8, on "Genito-Urinary Tuberculosis."—— At a meeting of the Women's Medical Society of Pittsburgh, February 23, Dr. William W. G. Maclachlan discussed pneumonia.——Speakers at the meeting of the Allegheny County Medical Society, February 16, were Drs. Stuart N. Rowe, on "Indications for Operation in Cases of Head Injury"; Joseph A. Soffel, "Resection of the Distal Colon for Malignancy," and Leon H. Hetherington, "Closed Intrapleural Pneumolysis as an Adjunct to Artificial Pneumothorax."——Dr. Claude S. Beck, Cleveland, delivered the Robert W. Stewart Memorial Lecture at the Pittsburgh Academy of Medicine, January 26; his subject was "Recent Developments in Surgery of the Heart."

RHODE ISLAND

Society News. — Dr. William P. Buffum, Providence, addressed the Washington County Medical Society, Westerly, January 13, on "Allergy in Childbirth."

Reference Required for Clinic Patients.—The chief of the division of hospitals and infirmaries of the state department of public welfare has issued an order to the effect that no patient will be admitted to any outpatient clinic under the jurisdiction of that division without a written reference from a physician registered in the state.

TENNESSEE

Dr. Madsen Gives Flexner Lectures. — Dr. Thorvald Madsen, director of the State Serum Institute, Copenhagen, Denmark, is in residence at Vanderbilt University School of Medicine, Nashville, to deliver the Abraham Flexner Lectures. He gave the first lecture March 10, on "Control of Venereal Diseases in Denmark, with Special Reference to Syphilis." Coming lectures are as follows:

March 15, Mechanism of Bacterial Infections.
March 19, Epidemiology of Tuberculosis.
March 24, The Influence of Seasons on Infections.
March 29, Whooping Cough.

Dr. Madsen has been head of the state serum institute in Copenhagen since 1902 and president of the hygiene committee of the League of Nations since 1921.

TEXAS

New Division in Charge of Eleemosynary Institutions. —The state board of control has established a division of eleemosynary institutions in the state government, it is reported. Dr. Charles W. Castner, superintendent of the Wichita Falls State Hospital, was appointed chief of the division. Dr. Castner had previously been superintendent of the Terrell, Rusk and San Antonio state hospitals. Dr. Barton W. Dorbandt, assistant superintendent of the San Antonio State Hospital, has been appointed to succeed Dr. Castner at Wichita Falls.

WYOMING

Maternal and Child Health Program.—The state board of health at its annual meeting in Cheyenne January 17 adopted a program for the new division of maternal and child health set up under the Social Security Act. The plan was drawn up by an advisory committee appointed by the governor, of which Dr. Josef F. Replogle, Lander, president of the Wyoming State Medical Society, was a member. Education is the keynote of the program, education of the lay public by classes, lectures and special literature and education of the medical profession by institutes and refresher courses in obstetrics and pediatrics. There will also be an investigation of maternal deaths, infant mortality and the physical status of children in general. Finally, public health nurses will be assigned to counties that desire them to educate the community in health matters. These nurses are instructed to work under physicians' orders when sick persons have a family doctor. They are expressly instructed not to suggest or show preference for any physician. Material to be used in classes for expectant mothers will be submitted to the family physician before classes are formed. Dr. Margaret H. Jones, Cheyenne, is director of the new division.

ALASKA

Tuberculosis Clinic.—St. Ann's Hospital, Juneau, recently opened a weekly tuberculosis clinic under the auspices of the territorial board of health. The same service is provided to natives at the government hospital on other afternoons weekly. According to the *Bulletin of the National Tuberculosis Association*, the incidence of tuberculosis in the territory of Alaska is now four times as great as that in New York.

PHILIPPINE ISLANDS

Medical Election.—At the recent annual meeting of the Philippine Islands Medical Association in Cebu, Dr. Juan C. Nanagas, Manila, was elected president and Dr. Antonio S. Fernando, Manila, was reelected secretary. Drs. Ramon L. Blanco, Cebu, and Sixto A. Francisco, Manila, were made vice presidents.

GENERAL

Academy of Ophthalmology and Otolaryngology.—The annual meeting of the American Academy of Ophthalmology and Otolaryngology will be held in Chicago at the Palmer House, October 10-15, instead of Detroit, as first decided. The society plans to make its scientific exhibit this year definitely educational, as well as to permit members on the program to demonstrate, through exhibits, material supplementing their contributions. Members having such exhibits are asked to communicate as soon as possible with Dr. William P. Wherry, executive secretary of the academy, 107 South Seventeenth Street, Omaha, Neb.

Warning Against Fraudulent Salesman.—A man giving the name J. S. Ray is reported to have solicited orders for a medical dictionary, magazines and "National Medical Monographs," a six volume work, as a representative of the Continental Press, Inc., 418 Wabash Avenue, Chicago. The National Publishers' Association recently issued a bulletin warning against a man using this scheme in the Southern states. He uses a fake contract form and a fake receipt. There is no such concern as the Continental Press, the bulletin says. Any one approached by this man is asked to hold him if possible and wire immediately to Mr. Frank Ware, National Publishers' Association, 232 Madison Avenue, New York.

Conference on Silicosis.—The division of labor standards, U. S. Department of Labor, sponsored its second conference on silicosis in Washington, D. C., February 3. Committees appointed by Secretary Perkins following the first conference in April 1936 made their reports. The speakers included Verne A. Zimmer, director, division of labor standards, and Secretary Perkins. Chairmen of the committees are:

Dr. Royd R. Sayers, U. S. Public Health Service, Washington, Committee on Prevention of Silicosis Through Medical Control.

Warren A. Cook, Hartford, Conn., Committee on Prevention of Silicosis Through Engineering Control.

V. P. Ahearn, Washington, Committee on Economic, Legal and Insurance Phases of the Silicosis Problem.

L. Metcalfe Walling, Providence, R. I., Committee on the Regulatory and Administrative Phases of the Silicosis Problem.

The first silicosis conference was called by Secretary Perkins following reports to Congress that silicosis had caused the deaths of "many workers" on a tunnel project in West Virginia.

Opportunities for Physicians in California.—Examinations for the following positions in the California state service will be held March 27: physician and psychiatrist, physician and surgeon, physician and internist and junior physician. The last is primarily for younger men and pays a salary of $100 plus maintenance, while the others pay $200 monthly plus living costs for each physician and his family. All four positions require a license to practice medicine in California and an education equivalent to that represented by graduation from an approved medical school. The "physician and psychiatrist" is also required to have had three years of experience in medical practice with some experience in psychiatry; the "physician and surgeon," three years of experience in medical practice with specialization in surgery, and the "physician and internist," three years of experience in medical practice with specialization in internal medicine, including one year of experience in an institution for the mentally diseased or deficient. The position of "junior physician" requires only one year of experience as a senior intern in a mental hospital or two years of experience as a junior intern, or two years of experience in the practice of medicine in a general hospital. Applications must be filed with the state personnel board in Sacramento before March 20. Physicians who are not residents of California will be eligible to apply for the positions.

Foundation to Educate Needy Boys.—A charitable foundation will be created under the will of the late Charles Hayden, New York banker, to assist needy boys and young men. According to the New York *Times* the bulk of Mr. Hayden's estate, estimated at about $50,000,000, will be used to set up and endow the Charles Hayden Foundation. The general scope of the organization will be as follows:

1. To assist needy boys and young men.
2. To aid and assist in charitable and public educational uses and purposes for the moral, mental, intellectual and physical well-being, uplifting, upbuilding and development of boys and young men of this country.
3. To found and/or to provide scholarships for deserving boys and young men of this country and for graduates or undergraduates of colleges, and to assist them in attending any educational institution in this country or abroad.
4. To assist in and/or to found, equip or provide for the maintenance of institutions or associations for the advancement of learning in this country.
5. To aid, assist, build, equip and maintain clubs, gymnasiums and recreation centers in this country for the training and development of boys and young men.
6. To aid and assist and to receive, hold, administer and dispose of property to or for the benefit of any university, college, school or other institution for the advancement of learning or of any branch or department thereof or for the benefit of any hospital or of any branch or department thereof.

The will pointed out that in the disposition of the funds preference should be given to New York and Boston but emphasized that nothing in the will should be construed to prevent the aiding of such activities anywhere else in this country.

CANADA

Dr. Abbott Honored.—McGill University, Montreal, at a special convocation conferred the honorary degree of doctor of laws, honoris causa, on Dr. Maude E. S. Abbott, formerly assistant professor of medicine and curator of the Museum of the History of Medicine. Dr. Abbott retired in August 1936 from the faculty of medicine after an association of thirty-seven years. She was graduated in 1894 from the University of Bishop College Faculty of Medicine, later absorbed by McGill, and was appointed assistant curator of the museum in 1901 and curator in 1902. She spent two years, 1923-1925, as professor of pathology and bacteriology at the Woman's Medical College of Pennsylvania, Philadelphia, after which she received the teaching appointment at McGill. Dr. Abbott has for many years been engaged in research on congenital heart disease.

FOREIGN

British Medical Journal Adopts New Cover and Type.—With the first issue for January 1937 the *British Medical Journal* appeared with a new dress and with new and improved typography. The new type is far more readable than that formerly used and is arranged in a column with sufficient spacing and white space to aid greatly the eyes of those who peruse regularly this publication. Typographical improvement has also been made in the supplement to the *British Medical Journal*, which, like the Organization Section of THE JOURNAL, is concerned with problems of organizational and medical economic character.

Medicine at the Paris Exposition.—Three pavilions will be devoted to medicine at the Exposition of Arts and Technics that will open in Paris in May. One will be known as the Claude Bernard Pavilion, in honor of the great physiologist, and in it will be demonstrations of the functioning of the human body, including a "transparent man." In the Laënnec Pavilion will be exhibits showing the evolution of clinical medicine during the past fifty years. All branches of medicine will be

represented, according to announcements. Motion pictures will be used and in many cases the treatment of certain diseases will be demonstrated. The relation of physics and chemistry to medicine will be shown in exhibits, and possibilities of the future will be indicated in displays dealing with research.

Government Services

Dr. Thompson Appointed Director of Institute of Health

Dr. Lewis R. Thompson, assistant surgeon general, U. S. Public Health Service, has been made director of the National Institute of Health, effective February 1. Dr. Thompson is 53 years of age and a graduate of the Louisville Medical College, class of 1905. From 1932 to 1934 he was a scientific director of the International Health Division of the Rockefeller Foundation and is now in charge of the division of scientific research of the public health service. Dr. Walter T. Harrison, senior surgeon in the service, has been placed in charge of the division of biologic control of the institute.

Annual Report of Public Health Service

According to the annual report of the surgeon general of the U. S. Public Health Service for the fiscal year ended June 30, 1936, the general death rate in twenty-five states was 10.8 per thousand of population as compared with 10.9 in 1934. The infant mortality rate, based on data from twenty-four states, was 52 deaths per thousand live births for the calendar year 1935, the lowest infant mortality rate recorded for these states. In twenty-four states the maternal mortality rate was 5.3 deaths of mothers per thousand live births. New low mortality rates were recorded for tuberculosis (54.3 per hundred thousand of population), diphtheria (3) and typhoid (2.8). Neither cholera nor yellow fever appeared in the United States during 1935. Three cases of plague occurred during the first six months of 1936, one in April in Sonoma County, Calif., one in June in Monterey County, Calif., and one in June in Beaver County, Utah. Plague infection was found in ground squirrels in California, Oregon, Montana and Idaho, and in fleas from ground squirrels taken in Nevada. After the close of the fiscal year, in July and August 1936, plague infection was found in a marmot, in ground squirrels and in prairie dogs from Utah. A fatal case of plague was reported in Hamakua District, Hawaii, in March 1935. During the calendar year 1935 twenty plague-infected rats were found on the island of Hawaii and six on the island of Maui, and during the first six months of 1936 eight plague-infected rats were found in Hawaii.

A total of 10,839 cases of poliomyelitis was reported in 1935 as compared with 7,517 cases for 1934 and an average of 8,249 cases for the five years ended with 1934. During 1935 the disease was unusually prevalent in North Carolina, Virginia, the District of Columbia and several of the Northeastern states. Although nearly 8,000 cases of smallpox were reported in the United States in 1935, an increase of more than 2,500 over the number for the preceding year, the prevalence was less than that for any year prior to 1933 for which there are records. The New England and Middle Atlantic states reported only three cases, while Montana and Wyoming together reported 1,060 cases. No cases were reported in Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New Jersey, Pennsylvania and the District of Columbia.

During the year 266,626 new cases of syphilis and 162,487 new cases of gonorrhea were reported to the state health departments as compared with earlier totals of 254,551 and 161,810 respectively; 713 clinics furnishing morbidity reports to state health departments reported 79,905 new cases of syphilis and 44,358 new cases of gonorrhea. They discharged as arrested or cured 63,566 patients and gave a total of 3,344,257 treatments, including 934,063 doses of arsphenamine.

There were examined 15,981 vessels, carrying 733,495 passengers and 1,182,232 seamen. Of a total of 3,823 airplanes, carrying 37,352 persons, which arrived at airports of entry in the United States from foreign countries requiring quarantine inspection, only 2,281 airplanes carrying 31,898 persons, of whom 5,537 were aliens, were inspected by medical officers prior to entry, owing to many arrivals at airports at which medical officers are not available. Fumigations were made of 1,193 vessels either for the destruction of rats or because of the presence on board of some contagious disease. Examinations for plague infection were made of 2,971 of the 4,585 rats retrieved following fumigation. No importation of any of the quarantinable diseases into the United States or its possessions occurred during the fiscal year. One vessel arrived at Boston with a case of smallpox. Two cases of smallpox were detected on the Mexican border and refused entry.

Hospital and outpatient care was furnished to American seamen and other beneficiaries at 154 ports; 331,215 accredited persons applied for treatment and other medical service. There were 102,573 more hospital days furnished to all classes of patients during the fiscal year 1936 than in 1935. New hospital facilities were completed and occupied at Stapleton, N. Y. A new hospital ward building at Memphis is under construction and funds have been allocated for complete new hospitals at Boston and St. Louis.

The report points out that industrial diseases are becoming a chief consideration. In a study of about 7,000 workers employed in fourteen factories, about one third were examined for the existence of skin hazards. An investigation was made of the dust hazard incident to the asbestos textile industry in North Carolina. Of 517 persons examined, forty-six, or 8.9 per cent, had asbestosis. During the year establishment of industrial hygiene units in the health departments of industrial states was inaugurated with the passage of the Social Security Act. A seminar for thirty-four physicians and engineers from sixteen state health departments was held in May 1936 for the purpose of training personnel in the specialized field of industrial hygiene.

Studies on child health completed during the year revealed that, so far as size and growth of children are concerned, the depression has not seriously affected any considerable number of American children. Automobile accidents, burns, drowning, falls, poisonings and mechanical suffocation are the most frequent causes of accidental fatalities of children under 15 years of age.

The largest quantity of Rocky Mountain spotted fever vaccine yet produced, 506.8 liters, was prepared during the fiscal year. Sufficient vaccine to vaccinate the personnel in forty-eight camps in the more dangerous endemic areas of the West and Northwest was furnished to the Civilian Conservation Corps. The incidence of the disease showed a marked decrease.

Special studies were made on heart disease, with emphasis on rheumatic fever, the largest single cause of disability and death from heart disease, and surveys are now in progress in San Antonio, Texas, and in Mecklenburg County, N. C., to determine the prevalence of brucellosis, particularly in atypical and chronic forms. Of special importance was the study of serodiagnostic tests for syphilis, which included an evaluation of the ability of state, municipal and private laboratories to perform these tests.

For the first time in the history of the public health service, a national health program was made possible under the provisions of the Social Security Act. Grants-in-aid were made to the states for the last five months of the fiscal year 1936 and allocations were made for 1937. By the close of the period covered by this report, every state had submitted a program of work under the provisions of the public health title of the Social Security Act.

Since the opening of the U. S. narcotic farm at Lexington, Ky., in May 1935, 1,240 patients have been admitted. Of these 960 were admitted during the fiscal year 1936 and 479 were discharged, leaving 761 patients in the institution at the close of the year. Of the voluntary patients discharged as cured none are known to have relapsed, but some of those discharged as having received maximum benefit have relapsed as well as some of the prisoners released on "conditional release" and parole. Plans were inaugurated during the year to furnish psychiatric diagnostic services to federal courts for a period of one year as a research project to determine the feasibility of establishing such services as a permanent activity of the service. The first unit was established at Boston in May 1936, and similar units will be set up at other points throughout the country. The report emphasizes the need of a new dispensary at Washington, D. C., to replace the present inadequate facilities for relief activities; the completion and rehabilitation of the hospital plant at Fort Stanton, N. M., including the construction of a recreation building and quarters for doctors, nurses and attendants; replacement of all existing frame structures at the leper hospital, Carville, La., with fireproof construction; completion of the marine hospital at Stapleton to provide a total of 1,200 beds, and a building to house a cancer investigation laboratory, and the erection of new hospitals in Miami, Fla., Los Angeles and Portland, Maine. The appropriations during the fiscal year totaled $15,939,712, including social security grants of $3,333,000. A total of $14,914,170 was expended by the service.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 13, 1937.

Regulations for the Health and Safety of Factory Workers

The present law regulating the conditions of work in factories is based mainly on the factory and workshops act of 1901, which has been amended from time to time but has never been subject to a general overhauling. Since 1901 there have been great advances in knowledge and practice with regard to health and safety in industry. The government is therefore about to introduce a new bill, which is not only consolidating but revising and is said to give greatly improved provisions. The requirements as to the cleanliness of factories are made more precise by including specific provisions with regard to accumulations of dirt and the cleaning of floors. The amount of space required per person is increased from 250 to 400 cubic feet, subject to a clause allowing the present arrangements to continue in existing workrooms, provided there is effective mechanical ventilation. In addition to requiring a reasonable temperature to be maintained in all workrooms, a standard of temperature is laid down for light work of a sedentary character, and power is given to the government to prescribe standards of temperature and prohibit unsuitable methods of heating. Not only must sufficient and suitable lighting be provided, but arrangements must be made for the medical supervision of the workers in certain circumstances, as, for example, in outbreaks of disease in particular factories.

SAFETY PROVISIONS

The provisions of the existing law have been largely recast and there are many new proposals requiring the adoption of various safety devices or arrangements, imposing duties on manufacturers with regard to the construction of new machines, and requiring precautions in the case of cranes, chains, air receivers and containers, compressed air receivers, and processes involving risk of explosion from dust or fumes. Specific requirements are laid down with regard to hoists and elevators, bringing them into conformity with modern practice. Provisions as to the means of escape from fire are considerably extended. When more than twenty persons are employed in the same building or when explosive or highly inflammable materials are stored or used, effective provision must be made for giving warning in case of fire. In certain cases effective steps must be taken to familiarize all employees with the means of escape and the routine to be followed in case of fire.

WELFARE WORK

By an act of 1916 the government was empowered to make "welfare orders" for work in factories. As the result of experience gained, specific provisions are now made for dealing with the provision of drinking water, washing facilities, accommodation for clothing in certain prescribed processes, and facilities for sitting for female workers. Existing provisions for the removal of dust are made much stronger. New provisions are introduced to control underground workrooms. Young persons must not be employed in lifting heavy weights, and maximum weights are prescribed both for them and for men and women, either generally or in particular industries.

SHORTER WORKING HOURS

According to the existing provisions, women and young persons may work in any week up to a maximum of sixty hours in nontextile and fifty-five and one-half hours in textile factories, exclusive of intervals for meals. Also women may be employed on a limited amount of overtime in certain trades. The bill greatly reduces hours. The weekly working hours shall not exceed forty-eight and the daily nine, exclusive of intervals for meals. But to enable pressure of work to be dealt with, women and persons over the age of 16 may work overtime to an aggregate not exceeding 100 hours in the year, subject to a maximum of six in any one week and to overtime taking place in not more than thirty weeks in the year. Also the 100 hours may be increased to 150, by permission of the government, for women in trades subject to seasonal or other pressure. Persons under 16 are not allowed to work overtime, and provision is made for reducing the amount of overtime for persons over 16 in any process in which this is prejudicial to health Exceptions are made for processes connected with the curing of fish, the preserving and canning of fruits and vegetables, and the making of cream, butter and cheese.

Store Depots for Gas Masks

The government is manufacturing 30,000,000 masks, enough to supply every person in the country in case of gas attacks. In the meantime the masks will be stored by the government, as they are of delicate construction and, if issued to the population now, many would probably be out of order when required. Two regional depots for storage have been acquired—one at Manchester and the other in the London district. These have between them a capacity of about 4,000,000 gas masks and facilities for their inspection and preservation. Eleven more regional store depots will be required and urgent steps are being taken to secure them. The system of distribution from these depots is now under investigation and it is proposed that the arrangement will include local store depots, each with a capacity of 30,000 gas masks. Ultimately the regional depots will be used to house the reserves of gas masks and of other stores required in connection with air raid precautions, some of which are of a bulky nature. In reply to a question in Parliament whether the gas masks would not have deteriorated before the war started, the minister replied "No. Special technical precautions are being taken so that these gas masks are in good condition."

Carcinogenesis

William Cramer and E. S. Horning have studied the carcinogenic properties of hormones. Estrogen is closely related chemically to some of the carcinogenic hydrocarbons. It is therefore not surprising that some of these induce estrus. But when tested by painting on the skin, the estrogens proved inactive. Subsequently Lacassagne found that subcutaneous injection over many months produced mammary cancer, even in male mice. This has been confirmed by several workers. It therefore seemed that a substance can be carcinogenic for one organ (the mamma) and not for another (the skin). To test this point, Cramer and Horning applied a dilute solution of estrogen to the skin of male and female mice for a prolonged period. The surprising result was that cancer developed in the mamma but not in the skin, and as readily in males as in females. This result indicates an organ specificity for carcinogenic agents, a fact not previously suspected. Some apprehension has been aroused as to the danger of using estrogen, but Cramer and Horning have shown that carcinogenesis requires much larger doses and much longer periods than those of therapeutic administration.

The Defense of Actions for Negligence

At the West London Medico-Chirurgical Society, Mr. Pearce Gould, president of the Medical Defense Union, gave an address on the defense of actions for negligence. He said that it was unfortunate that actions for negligence or threatened actions were on the increase. For this there were several causes. One was a loosening of the old time mutual confidence between physician and patient. Another was that lay persons were acquiring more knowledge of medical matters. A third was the news value of physician's peccadillos; their publication encouraged others to attack their physicians. The gravity of

the position was increased by the tendency of juries to award high damages. He divided actions for negligence into four groups: 1. The purely malicious, in which allegations were made by a disgruntled patient on no substantial grounds, perhaps to avoid paying his bill. A summons by a defense society would often bring payment, sometimes immediately before the hearing. 2. Cases in which there had been negligence. Here the proper course was to obtain a settlement on the best possible terms at the earliest possible moment. 3. Cases in which there appeared to the layman to be evidence of negligence, but from the medical point of view there was quite a good defense. If the complainant was reasonable it might be wiser to make a settlement on suitable terms without allowing the matter to be pursued by legal process. Often the defense society was convinced that there was a perfectly good defense but the respondent was unwilling to go into court because of the undesirable publicity even if the verdict should be favorable. 4. Cases in which there had been negligence but the physician was not to blame. Until recently it was held by the law that the physician primarily in charge of the case was responsible for all that happened. Now he was regarded as responsible in his own field. The surgeon was responsible for seeing that the theater sister was properly trained, but he was not responsible for a mistake made by her.

PARIS

(From Our Regular Correspondent)

Feb. 13, 1937.

Insulin Treatment of Schizophrenia

The Nov. 23, 1936, meeting of the Société médico-psychologique of Paris was devoted to a symposium by visiting and local alienists on the insulin treatment of schizophrenia. Muller of Munsingen reported the experience in 300 cases in Vienna and Switzerland. There were only four deaths, and these were due to organic disease associated with the mental disorder. The results were grouped according to the duration of the disease: Group 1, disease of less than six months' duration: 89.8 per cent improved, including 73 per cent completely cured. Group 2, disease of more than six months' duration: 82 per cent improved, including 50 per cent completely cured. Group 3, disease of more than eighteen months' duration: 45 per cent improved but including only 0.5 per cent complete cures. The reactions that have been observed vary from somnolence to convulsions, salivation, coma and numerous neurologic symptoms (pyramidal, meningeal, reflex). The treatment is to be given for several weeks.

Schmid of Münchenbusee spoke on the histopathology of insulin shock. Eleven rabbits were given daily injections of insulin at the rate of 2 cc. per kilogram of body weight over a period of several weeks. The symptoms resembled in every respect the neurologic and organic signs of hypoglycemia. Immediate necropsy of animals killed (before death from hypoglycemia could take place) has revealed much less marked changes in the nerve centers than anticipated. No destructive lesions, hemorrhage or edema were found, only "tumefaction." The changes were those of a capillary hyperemia due to the epinephrine response to the insulin treatment.

Bersot of Neuchâtel described the neurologic syndrome of insulin shock. Following injection the patient, before becoming more or less deeply comatose, can present all sorts of cortical, pyramidal, extrapyramidal and vagosympathetic symptoms. One most commonly observes tonic rigidity, clonic twitchings, more or less uncoordinated movements of the face and trunk, catatonic attitudes, stereotyped gestures, attacks of convulsive epilepsy, abolition of one or all reflexes, excessive perspiration and salivation, vasomotor disturbances, and a bradycardia down to 50. An instructive film was shown, illustrating the neurologic symptoms of insulin shock.

Guirard and Nodet read a paper on the principles and technic of insulin treatment. It is impossible to prove the theories as to the mechanism of this method. Experience has shown that severe physical ailments are often followed by the most chronic mental diseases. This suffices as a basis for cautiously reproducing severe organic disturbances in certain psychiatric cases, incurable by other methods, in order to improve the mental condition. The patient thus treated must be under the constant surveillance of the physician or intern, who has dextrose solutions ready to administer in case the symptoms following insulin injection should threaten life. The temperature should be taken frequently so as to detect an excessive lowering (hypothermia). The respiration must also be carefully noted and apparatus for artificial breathing be close at hand in case of necessity. The doses of insulin that produce coma should be kept at a minimum and not progressively increased, because the susceptibility of patients varies greatly. Carbohydrates should not be given the day before insulin is injected, and only a small dose of the latter, given every two days. If these precautions are followed, the chances of success are greatly increased.

Claude and Rubenovitch took up the insulin shock treatment of schizophrenia. Professor Claude is the leading alienist in Paris, having a large service at the St. Anne Asylum. They stated that the insulin should be injected early in the morning before breakfast. The effects last for three hours. The injections are given daily for five days, followed by an interval of two days. The sensibility of every patient is evidenced by the difference in time of appearance of the symptoms of shock. The insulin shock causes an "anarchic" activity of the somatic, neurovegetative and psychic functions. The coma should never be prolonged. It should be allowed to recede slowly and progressively in making use of psychotherapy during the recession period. The results obtained by using insulin as a shock treatment prove that the neurologic disturbances are due to a dynamic dysfunction and not to a lesion.

Bauer of Naugeat stated that his observations in seventeen cases have convinced him that the favorable results in schizophrenia are beyond dispute even in cases of long duration. The dangers of the treatment can be minimized through vigilant surveillance. During the recession of the coma, one has an excellent opportunity to study the psychologic mechanism of the disease.

Congress of French Electroradiologists

The third annual Congress of French Electroradiologists was held in Paris, Oct. 8-10, 1936. The first paper, on radiologic features of osteo-articular disturbances termed chronic rheumatism, was read by Robert and Forestier, who divided the bone changes into two groups: (*a*) arthritis, or infectious lesions, and (*b*) arthroses, or degenerative lesions. The former are characterized by local and general decalcification of the bone, by ulceration of the bone contours and, from the point of view of evolution, by the possibility of arrest of development of the lesions or even by reconstructive articular changes. The arthroses, on the other hand, are characterized by the production of erosive lesions at areas where there is articular friction, by the formation of osteophytes and by the slow, progressive character of the evolution of the lesions. A special place ought to be given to inflammatory disorders, which determine calcification of ligaments, the early diagnosis of which is of much importance in such a serious disease.

Three papers on high voltage radiotherapy formed a symposium on this subject. One on the physical aspects was read by Wangermez and Aurioc of Bordeaux. A primary well founded fact at present is that of the nonelectivity of short wavelengths. Based on the general principles of physics, it appears that radiant energy can be utilized only by a diminution of frequency and formation in the tissues of radiations of

very long wavelength. Hence the problem of high voltage radiotherapy is to find the factors that are able to cause penetration into the tissues of sufficiently large quantities, which by successive "degradations" will act on the most radiosensitive cells. It is unnecessary, however, that these successive "degradations" should be very numerous. It suffices that such changes can take place. A study of the factors of penetration shows that the most advantageous changes in the expense of transmission of the current are obtained in passing from 0.5 meter to 1 meter of focal distance at 200 kilovolts or in passing from 200 to 700 kilovolts without change of distance.

Gunsett of Strasbourg described the high voltage apparatus that he used for radiotherapy. The tension is constant and the tube is a special one, attaining a voltage of 520,000 volts and 3 milliamperes. He believed that the advantages of very high voltage were the following:

1. A very marked increase of the deep dose, which at between 200 and 520 kilovolts is 30 per cent.

2. A noteworthy decrease (about 36 per cent) of diffuse radiation, which enables the skin to tolerate a higher dosage with resultant beneficial action on the deep lying cancer.

3. With 520 kilovolts one can lessen the distance up to 80 cm. and shorten the duration of the sittings, the latter being of especial importance in cases in which several fields are to be treated by cross-firing.

Mathey-Cornat of Bordeaux said that the introduction in radiotherapy of high tensions, above 200 kilovolts, and especially from 300 to 500 kilovolts, has raised many new questions of a biologic and clinical nature. The term still currently employed of "high tension" is an imperfect description of this ultrapenetrating roentgenotherapy, which combines increase of distance with that of filtration and permits sittings that are not too long in cases in which fractional treatments over a prolonged interval are indicated. From the biologic point of view it is advisable to increase not only quantitatively but also qualitatively the deep dose to be distributed in the tissues. The high voltage technic demands accuracy and safety. The tumors in which irradiation from 300 to 600 kilovolts is especially indicated are deep seated thoracic and abdominal neoplasms. The contraindications are the same as exist for 200 kilovolts. Since using the high voltage treatment, the results at the Bordeaux anticancer center have shown a 10 to 15 per cent improvement. Of eighty-five patients treated during the past two years with the high voltage currents, 65 per cent primary cures and 55 per cent of over a year's duration have been noted in cases of cancer without selection of any special localization. For certain cancers the results do not show any improvement over the period when 200 kilovolts was used. The end results cannot be determined as yet. However, although high tension radiotherapy represents a step in advance, the cancer problem remains dominated by the biology of the question.

The Compulsory Retirement Law

A bill will be introduced by Mr. Pomaret during the present session of the French legislature to compel the members of all the liberal professions (architects, engineers, physicians, dentists, lawyers) to surrender their diplomas at the age of 65 without any prospect of receiving a government pension. The object of the proposed law is to make room at the top for the younger members of the respective professions. The bill has encountered violent opposition on all sides and it is doubtful whether it will ever reach a vote even in the Chamber of Deputies, in which there is a strong socialist majority. The members of all the liberal professions, in addition to payment of personal property and income taxes, are subjected to a third tax termed the "patente," or license to practice tax, which is calculated on the rental value of the space occupied in practicing the given profession. It has been suggested recently that the revenue from this third tax, instead of being paid to the government, should, in case the Pomaret bill becomes a law, be turned over to a fund from which a pension should be made to those who are forced to retire. Until the bill is actually subjected to open debate in the committee to which it will be referred for investigation as to its merits and injustice, no definite action can be taken by the organizations that represent the various liberal professions. Sufficient protests against the passage of such a law have already been made to render it doubtful whether the bill will ever emerge from the committee deliberations.

Irradiation of Adrenals in Obliterating Arteritis

Desplats and Langeron have employed radiation treatment during the past eight years in 200 cases of obliterating arteritis with about 62.5 per cent good results, 22.5 per cent partial results, 5 per cent failures and ten cases in which radiation could not be employed because of the presence of embolism, thrombosis or aneurysm. In diabetic arteritis, the results are almost constantly good. In thrombo-angiitis (juvenile arteritis) the results have thus far been favorable but close surveillance is necessary. In angioscleroses, many relatively good results have been obtained, and it has frequently been possible to avoid amputation. As to technic, the authors advise giving 150-250 roentgens per treatment, with a prolonged sitting. This method appeared to increase the number of successful cases.

BERLIN

(From Our Regular Correspondent)

Jan. 30, 1937.

Investigations of the Extent of Syphilis in a Large Urban Community

Dr. Strelow reports in the *Münchener medizinische Wochenschrift* observations from the examinations of syphilitic patients made at the University Clinic at Cologne, the largest hospital in that Rhenish city of 750,000 inhabitants. From 1921 to 1925, 15,000 cases of all kinds were received at the hospital, a patient received more than once being reckoned of course as a single case. Strelow states that the figures arrived at on the basis of this clinical material may be considered average for the entire population of Cologne. Of these 15,000 patients, 52 per cent were men and 48 per cent women. Among them there were 1,112 persons, or 7.4 per cent, who had become infected with syphilis. This proportion of syphilitic patients to the gross material fluctuated but little from one year to the next. There was a somewhat higher incidence of syphilitic infection among the men; 7.9 per cent of all male patients were syphilitic against 7 per cent of all female patients. Strange to say, there was a smaller proportion of unmarried persons among the syphilitic patients than among the hospital patients as a whole: 27.2 per cent of syphilitic male patients were single, against 40.2 per cent of all male patients, and 41.1 per cent of syphilitic female patients were unmarried, against 54.7 per cent of all female patients. Conversely, the number of syphilitic patients who had been married one time or another was greater than the corresponding proportion among all patients. The number of syphilitic patients who had been divorced was about four times the corresponding proportion among the patients as a whole.

As to age, the largest number of syphilitic men (28 per cent) were in the fifth decade of life and the largest number of women were in the third decade. Positive Wassermann reactions produced by early syphilis were observed in 76 per cent of 572 men and in 84 per cent of 470 women examined. The more frequent positive reactions among the women may be ascribed to their having received fewer treatments and this in turn may be due to the fact that syphilitic women are less apt to be familiar with the nature of their illness. According to the anamneses the infection had remained latent in more than 50 per cent of the men and in an even greater proportion of

the women, a circumstance which goes far to explain why 59 per cent of the men (366 out of 616) and 82 per cent of the women (409 out of 496) had never before, or only at a late date, received any treatment. Only 20 per cent of the men and a mere 6 per cent of the women had received treatment directly after the infection. Of the patients who had received previous treatment (if these are considered separately) only 50 per cent of the men and 35 per cent of the women had been treated immediately following infection. Moreover, exactly one half of this previously treated group had received but a single treatment, which, of course, could not have sufficed to eradicate the disease.

The influence of syphilis on the patient mortality was considerable; among nonsyphilitic patients received during the five year period the death rate was 9.6 per cent, whereas that of the syphilitic patients was 15.7 per cent, that is, 61 per cent greater.

The incidence of incipient disturbances of the central nervous system and of the circulation was a particular object of study (from this category were excluded all cases of fully developed tabes, cerebrospinal syphilis and dementia paralytica). Among the syphilitic patients there were 151 persons, or 13 per cent of the total number, who presented incipient neural disorders. Pupillary alterations of various sorts were observed in 110 cases, and anomalies of the patellar reflexes in only fifteen. To these 151 wholly incipient cases were added 229 cases of fully developed neurosyphilis; this means that about a third of all the syphilitic patients presented a disturbance of the nervous system. In 16 per cent of all syphilitic patients there was pronounced tabes. Thus every sixth syphilitic patient was tabetic. Careful evaluation of the connection between metasyphilis and therapeutic measures showed that there exists no provocation of tabes with antisyphilitic treatment at least, if only the antisyphilitic therapy is initiated as early as possible and administered intensively and repeatedly. The age of the male tabetic patients ranged from 25 to 66 years (the 25 year old tabetic patient became ill six years after infection; the 66 year old patient, twenty-seven years after infection). The average period of incubation was fourteen years (on the basis of forty-seven cases). The mean age of male tabetic patients at the time of first manifestation of the disorder was about 44 years; the mean age at which the disease had attained its complete clinical form was above 50 years. It may be that this six year interval should be regarded as the mean duration of development of tabes from the incipient stage to the stage of fullest development. The mean age of the tabetic women lay somewhat below that of the men; for the women too the average period of incubation amounted to fourteen years. The Wassermann reactions were positive for only about half of the tabetic patients, for 65 per cent of the women and for 50 per cent of the men. Accordingly, positive Wassermann reactions were even less frequent among the tabetic patients than among the syphilitic patients taken as a whole, perhaps because of the more intensive treatment usually accorded tabetic patients in the course of their illness.

With regard to syphilis of the circulatory system, thirty-one of the 155 tabetic patients (one in every five) presented unequivocal syphilitic disease of the aorta. On the other hand, aortic disease was established in only 137 of the 1,112 syphilitic cases; namely, one out of every nine patients was so afflicted. Of the 175 syphilitic patients who died in the course of the five year period, sixty-three patients (one out of every three) presented disease of the aorta accompanied in some instances by aneurysms and diseased valves. In twenty-two cases, that is, one out of every eight cases, there was a postmortem finding of coronary sclerosis. Syphilitic disease of the aorta or coronary arteries was given as the cause of death in thirty-seven of the 175 fatal cases. Vascular disease thus accounted for a fifth of the fatalities among syphilitic patients. Clinically, most of these thirty-seven fatal cases presented a picture of chronic cardiac insufficiency; not infrequently, however, there were sudden cardiac failures due in a few instances to the rupture of an aneurysm.

Congress of the German Society of Pathology

At the 1936 congress of the German Society of Pathology, held in Breslau, Professor Fischer-Wasels presided, and the chief topic of discussion was "Spontaneous Cerebral Hemorrhages." Nordmann of Hanover supplemented his observations with abundant illustrations. In two cases in which arteriography was used, permanent cerebral stasis with subsequent malacia was demonstrated. It was possible in cases of traumatic carotid sinus thrombosis to gage the progressive stages of this process: permanent stasis, diapedesis, malacia, vascular necrosis. In arteriosclerosis, cyclic hemorrhage and necrosis of the media were considered as characteristic prehemorrhagic alterations. If a malacia relates to the capillaries and is surrounded by cyclic hemorrhages, the afferent arteries will frequently exhibit necroses on the basis of which hemorrhages originate. The frequently encountered necrosis of the media in arteriosclerotic patients leads, after partial rupture of the arterial walls, to the formation of mural hematomas and of aneurysms. It has been proved by statistics that in hypertonic patients the softening process is manifested on an average ten years subsequent to the massive hemorrhage. In experiments it was determined that the "hypertensive" animals are especially predisposed to local disturbance of the cerebral circulation.

Professor Westphal of Hanover accords a prominent place in the production of spontaneous hemorrhage to the vascular functional factors. Necroses of the arterial walls, all important in the etiology of massive hemorrhages, are in turn based on functional ischemias. Changes in the vasomotor functions within the brain can first of all be determined on the basis of alterations in the fundus oculi. Westphal further considers an increase in the lactic acid a prime etiologic factor in arterial necrosis.

Beitzke of Graz discussed the rôle of small aneurysms in massive hemorrhage of the brain. In fifteen cases observed by him, small aneurysms were found concomitant with badly diseased arterial walls. Moreover, from microscopic observations in the brain substance he assumes the following etiologic background for the hemorrhage: After the bursting of an aneurysm the blood burrows into the cerebral substance which has been altered by atrophy or scarification and, proceeding farther, breaks the tissue asunder. By the rupture of a small adjacent vessel a fatal hemorrhage can be produced within the space of a few minutes.

After comparative studies of apoplexy and malacia, Fahr of Hamburg decided that younger persons are affected by apoplexy more frequently than is commonly assumed. The tendency of miliary aneurysms to form in apoplectic states has also been distinctly undervalued. In the majority of apoplexy cases the hemorrhage was traceable to organic alterations of the blood vessels; in a few cases, however, spasms seemed a more likely cause.

Among the papers submitted, Roessle of Berlin discussed the internal or anatomic similarity of blood relatives. In enzygotic twins there exist, in addition to external resemblance, striking visceral similarities; in one case these involved the contour of the heart, anomalies of the cardiac apex, the shape of the liver and distinctive furrows and flaps in both the liver and the lungs. Two of a set of triplets were considered to be enzygotic twins. This pair exhibited extensive correspondences in the shape of the heart, including the apex, whereas the third triplet presented a differently shaped heart.

Aschoff of Freiburg-in-Breisgau, on the basis of 150 cases, studied the types of pneumococci present in various organic diseases. In lobar pneumonia types I, II and III preponderated

over type X and its subspecies. Conversely, type X and its subspecies predominated in various forms of bronchitis and bronchopneumonia. Types I and II preponderated in meningitis, type I alone in peritonitis.

New Aspects of the Castration Question

As reported previously, data on the favorable results of castration are being assembled in Germany. However, these data are still to be appraised with the utmost caution in view of the brief period of observation which they represent and also as the interval between the operation and the first manifestation of its effect is far from uniform. The effect usually is first manifested only after an interval of months, but in many cases a period of years may elapse. Dr. Kopp, a jurist, whose article appeared in the *Deutsches Aerzteblatt,* stresses the paramount importance of a careful choice of the criminals to be castrated. The most frequently encountered sex offenders are exhibitionists, rapists, and persons guilty of crimes against children. According to Dr. Schlegel, medical superintendent of the Berlin Prison Hospital (THE JOURNAL, Feb. 2, 1935, p. 412) the libido became extinguished in some 90 per cent of castrated persons about four weeks subsequent to the operation; in a few cases it was enfeebled but became obliterated only after four months. The working ability of the prisoners was restored two weeks after operation. The morale of the castrated persons was good throughout; several among them who had previously showed a disposition to grumble became more friendly and tractable after the operation.

Number of Castrations Performed in Germany to August 1936

Year	1934	1935	1936
In Germany	672	324	120
In Berlin	141	135	37

BELGIUM

(From Our Regular Correspondent)

Jan. 22, 1937.

The First Congress of Structural Surgery

The first Congress of Structural Surgery proved completely satisfactory to both its organizers and its members. In addressing the opening session, Dr. Coelst stressed the importance of the new designation of this particular branch of surgery, a branch that is not to be confused with simple repair surgery, with general surgery or with purely esthetic and plastic surgery. Structural surgery includes all operations that concern morphologic changes and functional amelioration both in the internal bodily cavities and on the bodily periphery. Dr. V. Cheval, a member of the Academy of Medicine, after having furnished an account of plastic surgery in its relation to otorhinolaryngology, expressed his pleasure at the replacement of the term "esthetic surgery" by the term "structural surgery." Among those who then expressed their approval of structural surgery and discussed various aspects of the field were Professor Remynse of Rotterdam, Dr. Esser of Monaco, Professor Héger-Gilbert and Dr. Watry, both of Brussels, and Dr. Dupuy de Frenelle of Paris. Among the principal topics of discussion were the testing of free grafts, traumatic lesions of the face, and the treatment of cleft palate.

Mr. Dufourmentel of Paris has made a study of conditions under which transplanted tissues are most likely to take or survive. He sought first to determine the circumstances that underlie the successful taking of a transplant: the physiologic condition of the selected graft, the way in which it is adapted to the field of transplantation, the condition of this field and so on, and, if a homograft is used, the importance of the reciprocal reactions of the tissues of the donor and the tissues of the recipient. He emphasized in particular the importance of keeping the field of transplantation absolutely free from foreign bodies, with especial regard to microscopic bodies. He described the condition of transplanted issues that had been observed after varying periods of time up to twenty years and more. He concluded that a transplant may actually become naturalized provided the operation has been performed under favorable circumstances.

Dr. Straith of Detroit discussed the treatment of facial injuries: The frequency of traffic accidents has increased the number of traumatic lesions of the face that require surgical treatment. Disfiguration is often a source of mental anxiety and often enough may even lead to a psychic handicap that mars the social life and career of the victim. The end result will depend on the meticulous care with which diagnosis is made and the proper therapeutic measures, beginning with the first aid treatment, are instituted. If infection or some other complication should prevent initiation of an optimal course of treatment immediately following the trauma, plastic intervention should be postponed. No surgical treatment should be undertaken unless it can be carried through to completion. From beginning to end, every effort should be made to diminish the cicatricial formations and to return the patient to society as little disfigured as possible and without needless delay.

Dr. Wardill of Newcastle-on-Tyne discussed the treatment of cleft palate: In subjects presenting cleft palate the distance between the superior maxillae is greater than in the normal skull. There is a smaller amount of soft tissue filling the interstice. The anteroposterior and transverse diameters of the nasopharynx are increased. The objective of operative treatment is to create a functioning nasopharyngeal valve. This can be effected by use of the following procedures: rapprochement of the sides of the nasopharynx and the projection of the pharyngeal wall, the restoration of the soft palate in a position from which it can easily attain the posterior wall of the pharynx and thus close the valve, and the freshening of the borders of all the soft tissue at the level of the movable parts. Both sides of the nasopharynx are brought more closely together and the pharyngeal wall is projected forward by a pharyngoplasty. This operation should be performed before the child has learned to speak; that is, in the third year or earlier. Infants treated by this method acquire normal speech and the need for relearning is obviated.

Liaison Between Departments in Sanitary Affairs

The liaison between the Ministry of Public Health and all departments which, on no matter what head, are concerned with questions of hygiene and public health, constitutes, in theory at least, an extremely desirable innovation.

In several foreign countries some such measure of centralization exists and if these arrangements are by no means perfect they at least represent notable advances in the right direction. The reorganized Belgian health ministry may be expected to produce optimal results, although it represents so far only a first step along the path of centralization. But no matter how far this policy is carried in future, the fact cannot be overlooked that there will always remain certain types of service which it will not be possible or which it would not be desirable to sever from the ministry in which they are integrated. Some substantial and encouraging results have already been obtained along these lines without any intervention of a regulatory character, thanks to a generous breadth of understanding of hygienic and public health problems on the part of the men whose duty it is to uphold these things.

The time seems ripe on the occasion of the creation of the department of public health to organize suitably close cooperation between the services involved, in such a way as to assure a maximal efficiency and to coordinate all common efforts.

The establishment in conjunction with this department of an interministerial committee on which would serve all the

executives of those bureaus which deal with problems of public health, hygiene and sanitation would appear the surest and simplest means of fostering unity of action in the domain of hygiene and of arriving at a perfect synergy of the various organized groups without upsetting the administrative framework. The proposed innovation by no means implies the subordination of other departments to the ministry of health, it merely creates obligatory liaisons. The maintenance of tight partitions only acts as a detriment to concerted action.

The foregoing was the gist of the report submitted to the king which led up to the creation by his majesty of an interministerial executive committee of sanitary affairs. The duties of this committee are to establish a liaison between the various bureaus that are concerned in any manner whatever with problems of health, hygiene and public sanitation and to coordinate the health activities sponsored by these bureaus. Any contemplated legislation, decision or regulation having to do with problems of health must be examined beforehand by the committee, and it is compelled to submit its report within two weeks after it has been provided with the material requisite for a study of the measure in question.

The chairman of the committee is the minister of public health or his representative. The committee is composed of fifteen members, fourteeen of whom are selected by the various ministers to represent respectively the following governmental departments: public health, justice, foreign affairs and foreign commerce, the interior, public instruction, finance, agriculture, public works and unemployment reabsorption, social service and welfare work, economics, transportation; posts, telegraphs and telephones; national defense, the colonies. The fifteenth committeeman serves as secretary.

ITALY

(From Our Regular Correspondent)

Feb. 6, 1937.

National Congress of Industrial Medicine

The twelfth National Congress of Industrial Medicine took place recently at Naples under the presidency of Prof. Nicolo Castellino. Respect was paid to the memory of Prof. Luigi Devoto, recently deceased, founder of the first clinic for the treatment of industrial diseases and the president of the Società di Medicina del Lavoro. The first official topic concerned pathology from modern industrial chemistry. Professor Castellino said that physicians have to be familiar with the reactions to substances used in industry to prevent and treat the pathologic conditions that may result from intoxications or other forms of contact of workers with industrial substances. The development of modern working methods may result in physical and psychic disturbances of workers, which may be as serious as those caused by contact of the organism with chemical substances.

The subject of the second topic was ear diseases from noise. Professors Bruzzi of Naples and Malan of Turin were speakers. Ear diseases from noises are of great importance in industrial medicine, as they may develop in several modern industrial fields. Noise is the stimulation of the hearing apparatus by periodic and nonperiodic vibrations in association, causing, respectively, specific and nonspecific sensations in the human hearing apparatus. The latter collects the sounds induced by from 16,000 to 20,000 Hertz waves. Infrasounds (lower than 16,000 Hertz waves) and ultrasounds (beyond 20,000 Hertz waves) stimulate the hearing apparatus with nonspecific sensations and may produce alterations. The most harmful effects from stimulation of the zone of maximal sensitivity of the human hearing apparatus are those produced by intense sounds of 23,000 Hertz waves. Trauma from noise may be acute or chronic. The slow and benign evolution of industrial deafness, the absence of lesions of the middle ear and of symptoms from the vestibule, heredity and constitutional and endocrine predisposition of the worker are all factors in making a diagnosis. The speakers described the forms of deafness that develop in tinkers, weavers, railroad men, aviators and artillerymen. Early development of progressive lesions and failure of the treatment in improving the patient's condition are common characteristics of industrial deafness.

The third topic was diseases of the spine from work. Prof. Luigi Preti of Milan spoke on the causation of the condition. A process of degeneration of the intervertebral disks which is stimulated by continuous flexion, extension and bending of the spine during work is the most important factor. Degeneration of the vertebral disks is followed by a process of irritation of the periosteum of the entire vertebra, with possible consequent ossification of the periosteum and final destruction of the involved vertebra. Professor Prisco of Naples classified industrial spinal diseases in four groups: Those developed from repeated abnormal movements or effort of the spine, vertebral arthritis and diseases which seem to be related to infections that take place during work or with industrial intoxications. Diseases of the first group develop from para-industrial defective conditions of the worker stimulated by conditions of work beyond his individual resistance. Spondylitis deformans and apophyseal arthritis are the most frequent forms of vertebral arthritis in workers. They are the result of kinetic efforts which are necessary in performing certain types of work and have to be considered industrial diseases, especially from the point of view of medical insurance.

Professor Caso of Naples said that the dynamic, mechanical and physical agents which most frequently cause spinal diseases during accidents in work are acute effort, violence, falls, contusions, wounds and shock from either atmospheric or industrial electricity.

The fourth topic, obligatory insurance of workers against industrial diseases, was discussed by Professor Ranelletti of Rome. For the last two years, insurance against poisoning from lead, mercury, white phosphorus, carbon sulfide and benzene has been obligatory in Italy. Also insurance against ancylostomiasis is obligatory. The speaker reviewed statistical data obtained in Italy for the last two years in relation to frequency of denunciation, harm caused to workers from different diseases and the amount of money paid for indemnification and compared the data with those obtained in other countries. He advised that industrial medicine be more thoroughly taught in Italian universities.

Professor Aiello of Milan discussed the last topic, which was the mutual type of health insurance, a type of social insurance which is developing at the present in the departments of the ministry of working corporations in Italy.

The next Congress of Industrial Medicine will take place at Bari city.

Oncogenic Action of Hydrocarbons

Prof. Vincenzo Bisceglie of the Catania University, in a lecture recently given to the Società medico-chirurgica of the city, reported results of studies on the oncogenic action of polycyclic hydrocarbons. The author succeeded in obtaining growth of sarcomatous tumors from subcutaneous injections of 1:2 benzopyrene dissolved in olive oil in all rats that were treated. The tumors grew rapidly, passed by a process of infiltration and sometimes produced metastases. The speaker succeeded also in transplanting the tumors up to the fourth transplantation. Application of 1:2 benzopyrene over the skin of mice results in the production of spinocellular carcinoma in 75 per cent of the animals treated. The tumors develop within 110 and 162 days from the beginning of the treatment. Death took place shortly after development of the tumors. Lesions of the internal organs, especially myeloid transformation of the liver and the spleen and increase of the number of splenic megakaryocytes, were shown in all animals regard-

less of the form (either cutaneous or subcutaneous) of application of the treatment. The development of blastoma was not in direct relation with the intensity and extension of the general organic lesions. The tumor developed more rapidly and extensively in animals with small and few organic lesions than in those which had extensive lesions in great numbers.

Surgery of Pulmonary Tuberculosis

Professor Pototschnig, at a meeting of the Federazione per la lotta contro a tubercolosi, reviewed the progress in surgery of pulmonary tuberculosis during the last twenty years. The main object of the surgical treatment is to induce regression of tuberculosis by placing the lung in functional rest by collapse. Surgical treatment is resorted to with the same aim as that of artificial pneumothorax. It is resorted to when the latter cannot be performed or when the results of artificial pneumothorax are incomplete or insufficient. The speaker discussed the indications, advantages and disadvantages of the several surgical methods resorted to in treating pulmonary tuberculosis, with special reference to resection of the phrenic nerve, alcoholization of the intercostal nerves, scalenotomy, apicolysis and the operation of Jacobaeus. According to the speaker, surgery of pulmonary tuberculosis cannot be separated from general surgery. Close collaboration between the pulmonary tuberculosis specialist, the roentgenologist and the surgeon is important, especially in sanatoriums.

Personals

Prof. Francesco Pentinalli was recently appointed professor of general pathology at Naples University.

BUCHAREST

(From Our Regular Correspondent)

Jan. 23, 1937.

New Health Insurance Bill

As the law now stands, any employee who is incapacitated either through illness or by accident may claim sick benefit for six weeks no matter how many years he has been employed. A bill has been put before the Chamber of Deputies which proposes that ten years' employment shall entitle the employee to eight weeks' benefit, and every further five years of employment shall entitle the employee to a further week's benefit. Thus after thirty years' employment twelve weeks' benefit may be claimed. The employee will also be entitled to a further two weeks sick leave without pay, during which time his position must not be filled and he cannot be given notice. After two years' employment, maternity benefit is to be paid. An insured person who loses his employment will still be eligible for benefits for his employment for a quarter of the total period over which he has paid contributions, with a minimum of twenty-four months. According to present regulations the period is fixed at thirty months. The new system has been in force in Czechoslovakia for some time, where it is found to work well. Another suggested innovation is that contributors of ten years' standing who lose their jobs at the age of 55 should after twelve years' unemployment automatically become eligible for the old age pension, while for women the age limit is to be 54.

Medical Gymnastics for Mentally Deficient Children

At the recent meeting of the Bucharest Pediatric Society, Dr. Calimanescu stated that, in the treatment of backward or mentally deficient children, medical gymnastics is useful as a prelude to physical education. The treatment must of course be strictly individualized. Its effect is to develop the latent potentiality of the brain cells. Increase in muscular power goes hand in hand with progress of mental development and improvement in the child's sensory condition. The chief aims of medical gymnastics in cases of mentally deficient children are to aid in developing the efficiency of the motor, sensory and psychic elements of the cerebrospinal system, the sympathetic system, and generally to improve the constitution. The exercises are passive manipulations, mechanical shaking and strong vibration applied over the brain and spinal cord, and local nerve friction. Auditory and visual stimulation is afforded by telling the child to perform or to imitate movements. Active and passive, or resisted, movement of the joints may be associated with other forms of treatment.

The Campaign Against Venereal Diseases

The Commission on Venereal Diseases held its annual meeting recently. The secretary of the commission said that he thought that venereal diseases were somewhat less prevalent than in the years following the World War, but on this point it was difficult to speak with certainty; the statistics of deaths certified as due to syphilis are unreliable. He remarked that although large subscriptions are given to the combating of other diseases, little has been done with regard to venereal diseases. If it is desired to cure syphilis and get rid of the disease, said the report, anything that would aid early diagnosis ought to be at a patient's disposal without expense to him. In any scheme for the efficient treatment of the diseases, the establishment of night clinics in the large cities—Bucharest, Galatz, Jassy, Cluj—was essential.

The commission stated that though it had formerly been in favor of notifying all cases of venereal disease to the health authority, it had modified its view because it was convinced that notification would deter sufferers from seeking proper advice and would lead to increased recourse to quack treatment.

As to the education of public opinion with regard to venereal diseases, the commission stated that in the first place the infected person must be instructed. It should be made compulsory for medical practitioners to supply to every patient suffering from venereal disease printed instructions as to the nature of his disease and as to the measures he should adopt to avoid spreading it; copies of these instructions should be supplied gratuitously to physicians. Secondly, it suggested that all institutions where there are a large number of employees or institutions, such as colleges and universities, ought to have some course of lectures explaining the dangers of venereal disease. It was also of the greatest importance that the standard of knowledge of these diseases in the medical profession should be raised; in the past the teaching given was inadequate, but steps were now being taken in some of the more important hospitals to improve that situation.

Marriages

RASMUS V. WILLIAMS to Mrs. Helen Smith Merriam, both of Rushford, Minn., in Chicago, Dec. 27, 1936.

LEWIS WILLIAM GLATZAU to Mrs. Winnifred McDonald, both of Daytona Beach, Fla., Nov. 12, 1936.

JOHN A. SIMPSON, Athens, Ga., to Miss Mary Louise Schuman of Savannah, in December 1936.

JOSEPH THOMAS WHITFIELD to Miss Virginia Louise Evans, both of Nashville, Tenn., Dec. 30, 1936.

WELDON PAUL SANGER, Durham, N. C., to Miss Mary Ann Carr of Atlanta, Ga., in December 1936.

JOHN C. WEST to Mrs. Elizabeth Ann Patterson, both of Batavia, Ill., in Wheaton, Dec. 23, 1936.

RALPH BERNARD GARRISON to Miss Evelyn Louise Blackley, both of Hamlet, N. C., Nov. 14, 1936.

CLIFFORD H. BEACH, Richmond, Va., to Miss Jebbie Whitehead of Chatham, January 30.

CLARENCE GUNTER, Globe, Ariz., to Miss Camilla Nolstad in Reno, Nev., Dec. 16, 1936.

ANDREW B. SMALL, Dallas, Texas, to Miss Nancy Wright, Dec. 15, 1936.

Deaths

William Hermann Dieffenbach, New York; New York Homeopathic Medical College and Hospital, 1900; member of the American Roentgen Ray Society; at one time professor of therapeutics at his alma mater and professor of physical therapeutics and vice president at the New York Medical College and Hospital for Women; was an adviser to the U. S. Army Medical Corps during the World War; in 1905 was a delegate and vice president of the First International Congress of Radiology at Liege, Belgium; aged 71; a founder and past president of the medical board of the Broad Street Hospital and president of the board of directors of the Community Hospital, where he died, January 13, of cerebral hemorrhage.

Francisco Maria y Hernandez Fernandez ✠ Miami, Fla.; Columbia University College of Physicians and Surgeons, New York, 1908; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; past president of the Pan-American Medical Association; formerly Cuban secretary of state and Cuban secretary of sanitation; at one time assistant professor of ophthalmology at the University of Havana Faculty of Medicine; formerly chief of clinic, eye department, Mercedes Hospital, Havana; had been decorated by several governments; aged 50; died, February 14, of coronary thrombosis and diabetes mellitus.

Charles Moore Gandy ✠ Colonel, U. S. Army, retired, Ocean View, N. J.; Jefferson Medical College of Philadelphia, 1879; entered the regular army as an assistant surgeon in 1884, was lieutenant colonel in the medical corps in 1909, colonel in 1913 and retired in 1921 by operation of law; served in the Sioux Indian and Spanish-American wars, the Philippine Insurrection and the World War; served in the office of the Surgeon General, 1912-1914; past president of the Cape May County Medical Society; aged 79; died, January 8, of chronic cardiac disease.

Frederick Beach Burke ✠ Detroit; Georgetown University School of Medicine, Washington, D. C., 1906; associate professor of pediatrics at the Wayne University College of Medicine; president elect of the Wayne County Medical Society; aged 54; consultant in pediatrics at St. Joseph's Mercy Hospital and Deaconess Hospital; for several years chief of staff of Children's Hospital; on the attending staff of the Receiving Hospital and the Harper Hospital, where he died, February 2, of pneumonia.

Reginald Copeland Plummer, Seattle; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1908; member of the Washington State Medical Association, and the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; past president of the King County Medical Society; served during the World War; aged 55; formerly on the staffs of the Providence Hospital and the Swedish Hospital, where he died, Dec. 26, 1936, of pulmonary and genito-urinary tuberculosis.

James Percy McKelvy ✠ Pittsburgh; Columbia University College of Physicians and Surgeons, New York, 1901; past president of the Allegheny County Medical Society; fellow of the American College of Physicians; director of the medical division of the Allegheny General Hospital; chairman of the board of managers of the William Harton Singer Memorial Research Laboratory; aged 67; died, January 28, in St. Luke's Hospital, Kansas City, Mo., of heart disease.

Walter Olin Nisbet ✠ Charlotte, N. C.; Medical College of South Carolina, Charleston, 1889; fellow of the American College of Physicians; at one time dean and professor of diseases of the digestive system, North Carolina Medical College; on the staffs of the New Charlotte Sanatorium and the Presbyterian Hospital; aged 70; died, January 18, of coronary occlusion.

Edward Burke Bailey, Demopolis, Ala.; University of Virginia Department of Medicine, Charlottesville, 1897; member of the Medical Association of the State of Alabama and the Southeastern Surgical Congress; president of the Marengo County Medical Society; medical director and owner of the Hand-Bailey Infirmary; aged 60; died, January 5, in Linden.

Clarence W. Chapin, Clinton, Ill.; Northwestern University Medical School, Chicago, 1899; member of the Illinois State Medical Society; past president of the DeWitt County Medical Society; served during the World War; on the staff of the Dr. John Warner Hospital; aged 64; died, January 21, at St. Joseph's Hospital, Bloomington, of coronary thrombosis.

Stanley Blair Andrews, Toledo, Ohio; Miami Medical College, Cincinnati, 1908; member of the Ohio State Medical Association and the Associated Anesthetists of the United States and Canada; served during the World War; aged 53; on the staff of St. Vincent's Hospital, where he died, in January, of injuries received in an automobile accident in August.

Augustine Patrick Douglas Cleary, Canon City, Colo.; University of Virginia Department of Medicine, Charlottesville, 1892; Bellevue Hospital Medical College, New York, 1896; M.R.C.S., England, L.R.C.P., London, 1896, and F.R.C.S., Edinburgh, Scotland, 1897; veteran of the Spanish-American War; aged 66; died, January 12, in the Colorado Hospital.

Sidney Meeker, Memphis, Tenn.; University of Alabama School of Medicine, 1907; member of the Tennessee State Medical Association; served during the World War; physician to the Juvenile Court; on the staff of the Home for Incurables, St. Joseph's Hospital and the Gartly-Ramsay Hospital; aged 66; died, January 9, of heart disease.

Ross A. Mitchell, Moberly, Mo.; University Medical College of Kansas City, 1905; member of the Missouri State Medical Association; past president of the Randolph-Monroe County Medical Society; aged 55; formerly on the staff of McCormick Hospital, where he died, Dec. 8, 1936, of myocarditis.

Alfred William Bayliss, Buffalo; Niagara University Medical Department, Buffalo, 1889; for many years a member of the city health department; formerly on the staffs of the Sisters of Charity Hospital and the Emergency Hospital; aged 83; died, January 11, of cardiovascular disease and arteriosclerosis.

John Priestes ✠ Pittsburgh; University of Pittsburgh School of Medicine, 1922; fellow of the American College of Surgeons; resident physician to the Western Penitentiary Hospital; member of the staff of St. John's General Hospital and St. Joseph's Hospital; aged 38; died, January 10, of meningitis.

Claire H. Denman, Berkeley, Calif.; Hahnemann Medical College and Hospital of Philadelphia, 1893; also a minister; member of the California Medical Association; past president of the city board of education; formerly a medical missionary; aged 69; died, January 13, of acute dilatation of the heart.

Lawrence M. Demarest, South Orange, N. J.; University and Bellevue Hospital Medical College, New York, 1918; served during the World War; aged 48; died, January 14, in the United States Marine Hospital, Stapleton, N. Y., of cholecystitis, cholelithiasis and chronic appendicitis.

William Patterson MacCracken, Chicago; Hahnemann Medical College and Hospital, Chicago, 1887; formerly senior medical examiner for the aeronautics branch of the U. S. Department of Commerce; aged 73; died, January 31, of chronic myocarditis and arteriosclerosis.

Chauncy Valentine Perry, Greenfield, Mass.; Harvard University Medical School, Boston, 1928; member of the Massachusetts Medical Society; on the staff of the Franklin County Public Hospital; aged 36; died, Dec. 7, 1936, of an overdose of morphine, self-administered.

Carl Lester Magnus Holmberg, Brockton, Mass.; Harvard University Medical School, Boston, 1900; member of the Massachusetts Medical Society; formerly member of the city board of health; aged 62; died, Dec. 29, 1936, of aortic stenosis and chronic myocarditis.

Herman Haughton James, Bog Walk, Jamaica, British West Indies; Howard University College of Medicine, Washington, D. C., 1912; L.R.C.P., of Edinburgh, L.R.C.S., Edinburgh, L.R.F.P. & S. of Glasgow, 1924; aged 51; died, Dec. 15, 1936, of pneumonia.

John Jervis Allen, Monaca, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1891; member of the Medical Society of the State of Pennsylvania; on the staff of the Rochester (Pa.) General Hospital; aged 77; died, January 21, of cardiorenal disease.

Elton Streett Warner ✠ Wilkinsburg, Pa.; University of Pittsburgh School of Medicine, 1918; member of the school board and for many years chairman of the board of health; on the staff of the Columbia Hospital; aged 42; died, January 2, of pneumonia.

Joseph Tregelles Fox, San Diego, Calif.; L.S.A., London, 1877, and M.R.C.S., England, 1878; formerly a medical missionary; aged 81; died, January 4, in the Paradise Valley Sanitarium and Hospital, National City, of pyelitis, cystitis and carcinoma.

Henry Kajetan Seelaus ✠ Philadelphia; Jefferson Medical College of Philadelphia; assistant professor of surgery at his

alma mater; fellow of the American College of Surgeons; on the staff of St. Mary's Hospital; aged 40; died, February 14, of pneumonia.

Charles Brown Bastian, Williamsport, Pa.; Jefferson Medical College of Philadelphia, 1889; member of the Medical Society of the State of Pennsylvania; on the courtesy staff of the Williamsport Hospital; aged 75; died, January 13, of lobar pneumonia.

Arthur Hieronymus ⊕ Alameda, Calif.; Bellevue Hospital Medical College, New York, 1897; for many years a health officer of Alameda and formerly health officer of Oakland; aged 65; died, Dec. 5, 1936, of arteriosclerosis and coronary thrombosis.

Leo Alexander Chrzanowski, Joliet, Ill.; Loyola University School of Medicine, Chicago, 1933; member of the Illinois State Medical Society; aged 30; died, January 21, in St. Joseph's Hospital, of duodenal ulcer and secondary hemorrhage.

Mary Emma Dickinson, Rochester, N. Y.; University of Buffalo School of Medicine, 1890; member of the Medical Society of the State of New York; aged 78; died, January 13, in the Belvidere Private Hospital, of myocarditis and influenza.

William Rightman, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; on the associate staff of the Frances E. Willard Hospital; aged 61; died, January 19, of coronary thrombosis.

Carl Renz ⊕ Mill Valley, Calif.; Eberhard-Karls-Universität Medizinische Fakultät, Tübingen, Württemberg, Germany, 1889; fellow of the American Psychiatric Association; aged 72; died, January 22, of heart disease and influenza.

Neill John Doherty ⊕ Crystal Lake, Ill.; Loyola University School of Medicine, Chicago, 1933; aged 40; died, Dec. 9, 1936, in the Hospital of St. Anthony de Padua, Chicago, of hypertension, chronic nephritis and cardiac dilatation.

Floyd William Burns, St. Paul; College of Physicians and Surgeons, School of Medicine of the University of Illinois, 1902; served during the World War; aged 60; died, January 20, of cerebral hemorrhage and hypertension.

William Winston Waggoner, Webb City, Mo.; Cincinnati College of Medicine and Surgery, 1892; member of the Missouri State Medical Association; aged 74; died, Dec. 15, 1936, of paralysis following cerebral thrombosis.

Gilson Hild, Indianapolis; Indiana University School of Medicine, Indianapolis, 1936; aged 24; intern at the Methodist Episcopal Hospital, where he died, Dec. 29, 1936, of pulmonary embolism following an appendectomy.

Charles G. Corson, Rileyville, Pa. (licensed in Pennsylvania, year unknown); member of the Medical Society of the State of Pennsylvania; aged 78; died, January 17, of cerebral hemorrhage and arteriosclerosis.

Adolph Baron ⊕ New York; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1890; on the staff of the Lenox Hill Hospital; aged 72; died, January 3, of heart disease.

Henry Tutwiler Young, Greensboro, Ala.; University of the South Medical Department, Sewanee, Tenn., 1899; also a lawyer; aged 67; died, Dec. 23, 1936, of acute dilatation of the heart and myocarditis.

Morton Leonard Dudley, Roanoke, Va.; College of Physicians and Surgeons, Baltimore, 1905; attached to the relief and pension department of the Norfolk and Western Railway; aged 52; died, Dec. 17, 1936.

Ralph S. Piper, Chicago; Hahnemann Medical College and Hospital, Chicago, 1900; aged 59; died, January 10, in the Chicago Memorial Hospital, of peritonitis due to a perforated duodenal ulcer.

William Thomas Burke, Toledo, Ohio; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1895; aged 68; died, January 2, in the Mercy Hospital, of tumor of the kidney.

William Aaron Melick ⊕ Zanesville, Ohio; Bellevue Hospital Medical College, New York, 1884; aged 77; on the staffs of the Good Samaritan and Bethesda Hospital, where he died, Dec. 1, 1936.

August Theodore Schaefer, Boston; College of Physicians and Surgeons, Boston, 1903; aged 84; died, Dec. 10, 1936, in the Boston City Hospital of bronchopneumonia and coronary occlusion.

Frank Elmer Tilden, North Easton, Mass.; Harvard University Medical School, Boston, 1876; aged 83; died, Dec. 21, 1936, of fracture of hip due to an accident and bronchopneumonia.

Joseph Michael Baldwin, Woodbridge, N. J.; Tufts College Medical School, Boston, 1935; aged 27; died, January 5, in the Muhlenberg Hospital, Plainfield, of acute cardiac dilatation.

Isaac N. Campbell, San Antonio, Texas; Louisville (Ky.) Medical College, 1892; aged 67; died, January 7, in the Nix Hospital, of endocarditis and blood stream streptococcus infection.

Henry R. Wheeler, Pocatello, Idaho; University Medical College of Kansas City, Mo., 1896; formerly a physician in the Indian Service; aged 73; was found dead in December 1936.

Elizabeth I. Samuel, West Barnstable, Mass.; College of Physicians and Surgeons, Boston, 1886; aged 76; died, January 6, in West Yarmouth, of shock following phlebitis.

Edward U. Banker ⊕ Aurora, Ill.; Rush Medical College, Chicago, 1904; on the staff of St. Charles Hospital; aged 59; died, January 10, of a malignant tumor of the colon.

Henry Perkins Moseley, Santa Barbara, Calif.; Columbia University College of Physicians and Surgeons, New York, 1898; aged 64; died, January 4, of angina pectoris.

Frederick Harrison Busby, Detroit; University of Michigan Medical School, Ann Arbor, 1920; aged 53; died, January 16, in the Harper Hospital, of multiple myeloma.

Albert F. Huddleston, Winchester, Ind.; Pulte Medical College, Cincinnati, 1881; aged 77; was killed, Dec. 25, 1936, in an automobile accident near Forsythe, Ga.

Robert James Campbell, Winnipeg, Manit., Canada; Manitoba Medical College, Winnipeg, 1891; aged 75; died, January 29, of coronary artery thrombosis.

Bruno Schallern, Ripon, Wis.; College of Physicians and Surgeons of Chicago, 1888; also a pharmacist; formerly mayor of Ripon; aged 82; died, Dec. 7, 1936.

Nevin Millet Wetzel, Kansas City, Mo.; Barnes Medical College, St. Louis, 1900; aged 67; was stabbed and killed with an ice pick, January 11, by a patient.

George Henry Randell, Orange, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1878; aged 84; died, Dec. 12, 1936.

William John Chambers, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1884; L.R.C.P., Edinburgh, Scotland, 1884; aged 75; died, Nov. 29, 1936.

George Elkanah Drew, New Westminster, B. C., Canada; University of the City of New York Medical Department, 1881; aged 79; died, Dec. 14, 1936.

E. Lafayette Harmon, Corbin, Ky.; Hospital College of Medicine, Louisville, 1906; aged 56; died, January 19, near London, of cerebral hemorrhage.

Mary Innis Denton, Buffalo; University of Buffalo School of Medicine, 1891; aged 80; died, January 19, in St. Catharines, Ont., Canada, of myocarditis.

James M. Digby ⊕ Newport, Ky.; Medical College of Ohio, Cincinnati, 1889; formerly county coroner; aged 70; died, January 17, of heart disease.

Howard S. Mace, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1890; aged 69; died, Dec. 6, 1936, of chronic nephritis.

Mary Carswell McClellan, Lexington, Ky.; Woman's Medical College of Pennsylvania, Philadelphia, 1907; aged 63; died, Dec. 21, 1936.

Gadsden E. Howe, Silverdale, Wash.; Medical College of the State of South Carolina, Charleston, 1887; aged 82; died, Dec. 2, 1936.

William Cluthe, Evansville, Ind.; Medical College of Ohio, Cincinnati, 1875; aged 89; died, January 16, of prostatic obstruction.

Lee Bird, Rock Spring, Ga.; Chattanooga (Tenn.) Medical College, 1902; aged 59; died, January 11, of cardiovascular renal disease.

George Eric Miller, Fayetteville, Ark.; Pulte Medical College, Cincinnati, 1885; aged 84; was found dead in bed, Dec. 5, 1936.

William A. R. Wickham, South Bend, Ind.; Eclectic Medical Institute, Cincinnati, 1880; aged 76; died, Dec. 20, 1936.

Will T. Neal, Omaha; Rush Medical College, Chicago, 1890; aged 70; died, Dec. 19, 1936, of coronary thrombosis.

David W. Holmes, Bellevue, Texas; Eclectic Medical Institute, Cincinnati, 1891; aged 73; died in December 1936.

Elmer Logan Sloan, Joplin, Mo.; Barnes Medical College, St. Louis, 1907; aged 67; died, Dec. 2, 1936.

Correspondence

ARGYRIA AND LIPOID PULMONARY DISEASE FOLLOWING INTRANASAL MEDICATION

To the Editor:—Pity the persons today having what is termed the common cold. Especially unfortunate are infants and children. No sooner does a child have a sniffle than the mother, who may have been instructed by a physician or local druggist, begins flushing the nose with various popular nose remedies. A timely report by W. J. Kerr (The Common Cold, The Journal, Aug. 1, 1936, p. 323) asks: "Since it is apparent that no rational means are available to prevent or treat a common cold on the basis of the hypothesis of infectious origin, isn't it urgent to go back to fundamentals and start anew?" It is well to recall that a few decades ago the physician in treating a cold prescribed the usual supportive measures, letting the nose "run" at will. Who can question the rationale of permitting natural drainage?

Little is known concerning the function of the erectile tissue situated over the turbinate bones of the nose. Every one, however, recognizes that it is an exceedingly sensitive and delicate vascular structure. It is thought that it not only prepares the incoming air for the respiratory tract but also is in some way related to the function of the skin, lungs and kidneys in regulating the heat and water in the body. Another structure equally important in the physiologic as well as defense functions of the body is the ciliated epithelium in the nose. It has been shown that even saline solutions and distilled water will interfere with the normal function of the cilia. What is going to happen to these important structures in the nose when they are repeatedly doused with various irritating or even nonirritating chemicals and oils? Time alone will bring out the resultant effects and thus decide their fate. It always has proved true that any tampering with the purposeful function of an organ sooner or later leads to untoward consequences.

Appearing in The Journal, Dec. 5, 1936, was one of a series of articles prepared by eminent authorities for the purpose of extending information concerning the official medicines. They have been planned and developed through the cooperation of the U. S. Pharmacopeial Committee of Revision and The Journal. This report, by Clyde A. Heatly, was entitled "Local Medication of the Upper Respiratory Tract." The introductory sentence suggested that the general practitioner confine his use of local medication for the most part to acute infections of the upper respiratory tract. Under the subject acute rhinitis the author said "The commonly used silver colloids mild protein silver and neosilvol (10 per cent solution) have been found experimentally to destroy epithelium and to impair ciliary action. Nevertheless, they will continue to be widely used for their recognized empirical value." There was no statement or word of caution concerning the likelihood of argyria from their continued use. Cases of argyria from intranasal and pharyngeal applications of silver preparations have become increasingly prevalent during the last few years (Gaul, L. E., and Staud, A. H.: Clinical Spectroscopy, The Journal, April 20, 1935, p. 1387). There is no successful treatment for these unfortunate victims, who of late include a fair number of discolored children. Silver preparations were again mentioned for the local treatment of acute infections of the throat. The following, reported through the courtesy of Dr. Juan Figueroa of Havana, is a typical case history in argyria: B. M. O., a Cuban druggist, aged 46, had had hay fever for sixteen years. In 1929 an ear, nose and throat specialist "recommended" the use of a 3 per cent solution of mild protein silver, 30 drops twice a day, in both nostrils. He followed this treatment for two years. In 1931 the strength of the solution was doubled. In 1932 he noticed the first signs of discoloration, which gradually became more marked. He was ordered to stop the medication in 1934. Fifteen additional cases have been reported and observed since 1935.

In addition, Heatly emphasizes that present experimental studies have demonstrated that many of our accepted local preparations are actually destructive to epithelium and favor infection by impairing ciliary activity. He refers to the commonly used nasal oils containing liquid petrolatum, eucalyptol, menthol, camphor and thymol as having this effect. He also points out that the indiscriminate use of liquid petrolatum as nasal drops in infancy is not entirely without danger in view of the numerous reported cases of lipoid pneumonia from accidental inhalations.

Even though experimental data and actual clinical and pathologic observations stress the outcome of using oily preparations intranasally, strangely enough the author has included prescriptions containing these very substances. More or less paralleling the popularity and wide usage of oily preparations in the nose have been not only the increasing number of cases of sinusitis and lipoid pneumonia but also bronchopulmonary disease attributed to their use (Tchertkoff, I. G., and Ornstein, G. G.: Bronchopulmonary Disease Attributed to the Use of Intranasal Instillations of Oily Substances, *Sea View Bull.*, January 1936). During 1936 there have been additional cases reported and observed. In view of these facts it seems out of place and hazardous to recommend such medications to physicians, who in turn may advise their home use by parents.

Today proprietary remedies for the nose are advertised blatantly to the profession and public and sold by druggists indiscriminately. If the common cold proves to be a constitutional reaction to fortify and keep mobile the defense mechanism of the human body, some one has certainly erred.

L. Edward Gaul, M.D., New York.

REQUESTS FOR REPRINTS

To the Editor:—Under this title in The Journal of January 16, page 224, Dr. W. A. Bastedo has reported that he has been irritated by requests for reprints which were not accompanied by return postage, and that he throws the post card requests in the waste basket.

I have observed that many earnest workers in laboratories and in the clinical sciences keep files of reprints of articles pertaining to the subjects in which they are particularly interested.

My associates and I too receive numerous post card requests for reprints, and from some of the best known men and laboratories in the country. I disagree with Dr. Bastedo. I feel that special studies should be encouraged by the free distribution of reprints to any one interested enough in any given line, as long as it does not become too much of a financial burden on the author. This the author can control by the number of reprints ordered.

Roy D. McClure, M.D., Detroit.

FACIAL INJURIES

To the Editor:—In his paper on facial injuries in The Journal, January 9, Dr. C. L. Straith refers to Dr. J. J. Shea (The Journal, Feb. 7, 1931, p. 418) as "elevating the malar bone by means of an antrum trocar inserted into the antrum through the nose."

In The Journal, Dec. 21, 1929, I described the method reported by Dr. Shea. In the same article I mentioned the method Dr. Straith calls his—entering the antrum through the lateral alveolar margin—and gave reasons for not using it.

Entering the antrum with a trocar (preferably through the nose) is a proper procedure; however, elevating the fractured

bone with a sharp pointed instrument such as an antrum trocar obviously will further injure the already traumatized mucous membrane within the antrum and should not be used for elevating the bone. A solid urethral sound is better.

J. J. HORTON, M.D., Memphis, Tenn.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

PREGNANCY AFTER TUBERCULOSIS

To the Editor:—What is the present best opinion as to dangers of pregnancy in a 40 year old American born, one-eighth colored blood, who had one child sixteen years ago and developed active pulmonary tuberculosis five years ago for which she spent two years in a state sanatorium, where extensive left thoracoplasty was done, resulting in apparently completely arresting the disease? The patient returned home two years ago and has been observed monthly since, negatively as to a pulmonary condition. Is an early abortion definitely indicated? If pregnancy proceeds, what are the chances of lighting up the pulmonary condition? At what stage of pregnancy is it most likely to reappear, if it does at all? If she goes to term is a long labor more or less dangerous than operative intervention in the second stage? If any operative intervention becomes essential, what type of anesthesia is least dangerous? M.D., Massachusetts.

ANSWER.—Pregnancy is usually considered safe for the patient who has had pulmonary tuberculosis provided the lesion is healed and has remained so for a period of two years or longer, corroborated by repeated x-ray examinations. From the information given, the prognosis as regards this pregnancy should be good, since one assumes that the first pregnancy was not complicated by toxemia or difficult labor. The age factor of itself is of little moment. Such a patient, however, requires careful watching throughout the pregnancy and frequent x-ray examinations to make certain that no new infection has developed.

An early aborton is not indicated unless it is demonstrated that a fresh infection has developed in the other lung or the healed lesion has become activated. On the other hand, if nephritis or heart disease should complicate the picture or if hyperemesis is present, the uterus should be emptied early. As to the possibilities of lighting up the pulmonary condition, little can be said one way or the other. The chances are all dependent on whether or not the lesion has been completely healed. If a lighting up of the pulmonary condition does occur, it is most likely to occur in the latter months of pregnancy when the splinting of the diaphragm induces a costal type of breathing and the respiratory rate becomes increased. If activation does take place it is most likely to manifest itself as a tuberculous pneumonia.

More frequently, however, activation occurs in the puerperium, owing perhaps to the effect of the labor, the straining and increased blood pressure being sufficient to break down walled off areas and thus liberate many free organisms. If the patient goes to term she should certainly be spared the exhausting effects of a long labor with the resulting depletion in the powers of resistance. Therefore, if a long labor is anticipated, one should seriously consider elective laparotrachelotomy under local infiltration anesthesia, combining with this operation some form of sterilizing procedure. If active infection is present it might be well to do a Porro operation, removing a potentially tuberculous placental site.

When the first stage is likely to be normal, the analgesic of choice would logically be morphine, avoiding the newer barbiturates. Voluntary bearing down efforts should not be permitted in the second stage, since the increased work throws too much strain on the lungs. The treatment of the second stage should resemble that of the cardiac patient; i. e., an operative delivery provided the patient does not quickly and effortlessly deliver herself.

The least dangerous type of anesthesia is obviously one that will not affect the respiratory system. Therefore, some form of local anesthesia is indicated. Thus, for a simple outlet forceps infiltration anesthesia or infiltration plus pudendal block is satisfactory. When it is necessary to do a major operative delivery, such as a midforceps, the parasacral technic may be used and will usually give adequate anesthesia and is least dangerous.

BLEEDING AT THE MENOPAUSE

To the Editor:—A woman, aged 51, in whom menstruation began at 14 and was regular every twenty-eight days, with a profuse flow of from nine to ten days, went through the menopause at 47 with irregular menstruation for two and one-half years. She was treated by a physician, who stopped the bleeding in six months. She came to my office complaining of profuse bleeding after nine months' cessation, weakness, headache and slight lumbar pain. At the first period, February 23, she bled for ten days. The second period started March 23 and she is still flowing after sixteen days. Her weight is 200 pounds (91 Kg.). The blood pressure is 144 systolic, 90 diastolic. There is tenderness to pressure over the uterus and the left tube. The cervix is clear. The flow is mixed with clots. What is the diagnosis? Please outline therapeutic measures. Kindly omit name. M.D., Illinois.

ANSWER.—The only certain way to make a diagnosis in this case is to perform a curettement and this should be done without any delay. A woman who is 51 years of age and begins to bleed profusely from the uterus after having stopped menstruating for nine months should be looked on as having a carcinoma of the uterus until this diagnosis is ruled out. It is by no means true that all women with such a history have cancer of the uterus, but every physician should think of this diagnosis first and waste no time in performing a diagnostic curettement or biopsy of the cervix or both. If the uterine endometrium fails to reveal a carcinoma, a benign endocrine basis may be assumed for the bleeding. However, this diagnosis should not be made until a careful bimanual examination has been made to rule out an ovarian tumor, such as a granulosa cell tumor. If there is no malignant condition present in the cervix or the body of the uterus the bleeding can be stopped by the application of radium within the uterine cavity or by high voltage roentgen therapy. If cancer is present in the uterus a total hysterectomy may be performed with preoperative or postoperative radiation therapy, or the treatment may consist entirely of irradiation.

INDUSTRIAL DERMATITIS IN CONDUIT FACTORY

To the Editor:—Workers in a line manufacturing company near here have been having considerable trouble with a dermatitis limited to the face. These men work in a yard where conduits are stacked. Contact with the conduits is not necessary to produce the eruption, and they are able to handle them without danger of the dermatitis developing on the hands. The workers believe that the wind blowing off the conduits toward them carries some chemical that causes the dermatitis. Six out of the ten yard workers are afflicted in this manner. Workers inside the plant engaged in the manufacturing of the conduits have no trouble, but when they go into the yard they too develop the eruption. The yard workers, on the other hand, when transferred to the factory have no trouble. The conduits are made in the following manner: Pulp and water are mixed together, placed on a form and allowed to dry. They are then dipped in pitch again, allowed to dry and then stacked in the yard. The chemical components of the pitch solution are not known and the manufacturer won't tell. Apparently when the pitch drys some irritating chemical is released which is the irritant. We have ruled out ragweed, ivy, and so on. We believe that it is due to some chemical in the pitch and I wondered whether you have any knowledge as to what the irritant might be and some method to combat it. H. J. FARRELL, M.D., Milwaukee.

ANSWER.—Only a speculative reply can be made at this time, owing to the absence of salient information in the data submitted. The term "pitch" is loosely applied to rosin, bituminous and petroleum still residues, asphalt, creosotes, and conceivably water gas tar and coal tar. Since the high temperatures necessary to reduce some of these substances to a limpid state suitable for application to paper would damage the paper, it is presumed that this pitch is applied in chemical solution or suspension. The solvent employed for this purpose might be any one or a combination of several. The most likely is some petroleum derivative on the order of naphtha. Additional possible constituents among others are solvent naphtha, carbon bisulfide, chlorinated hydrocarbons and crude light oils. Any of the agents mentioned may be the source of a dermatitis following contact either indoors or outdoors, but more readily prior to drying. The diagnostic difficulty lies in the statement that the dermatitis arises only among workers employed outdoors handling the dried conduits and in the limitation of the dermatitis to the face, whereas the hands coming directly in contact with the conduits are consistently free. It is well known that certain chemicals respond to the action of chemical rays in the sunlight by the production of new or augmented irritants. Turpentine may be presented as an example. Freshly distilled gum spirit turpentine is relatively nonirritating to the skin. After it has been exposed to the sunlight, irritant properties quickly are increased. This is equally true when air is bubbled through fresh turpentine. A related phenomenon may account for the occurrence of a dermatitis in these yard workers but will not explain the freedom from involvement of the skin

and eyes. It has been observed that railroad track workers employed in hot summer months around freshly impregnated ties may develop a dermatitis from emanations of the chemicals used for water proofing and fire repelling. This occurs in the absence of direct contact. The present situation involving impregnated conduits is comparable.

Another item worthy of consideration grows out of the possible use of inorganic chemicals as constituents of the impregnating materials for fire prevention. Zinc chloride may be so used. When completely dry, zinc chloride dust might be produced on wood or paper impregnated articles; blown on the skin, a dermatitis may arise.

In the trade described, the occurrence of an industrial dermatitis is not questioned—it is expectable; but a dermatitis of the face without eye irritation and without an appearance on the hands and arms is doubted. For clarification purposes it is suggested that patch tests be carried out on both afflicted and control groups, using shavings from untreated conduits, treated conduits before and after outside exposure, impregnating pitch, and so on. In the absence of positive tests, other irritants or sensitizers should be sought. In case the dermatitis is traced to dust or vapors blown off the conduits on the faces of workmen, reasonable protection may be procured by smearing the face with a tenacious grease, such as hydrous wool fat, prior to the beginning of any work period. Such grease will serve as a fairly effective barrier, preventing contact with the skin.

TREATMENT OF ANEMIAS

To the Editor:—A man, aged 75, has a typical "pernicious anemia," according to the blood picture, gastric examination and nervous symptoms. He is taking large quantities of liver daily (orally in capsule form) and hydrochloric acid (dilute) three times daily. The blood picture remains normal except for occasional remissions. The gastro-intestinal symptoms of nausea, diarrhea (occasional) and anorexia persist, as do certain nervous manifestations such as temporary aphasia and mild mental depression. He complains that every morning at 10 o'clock he feels drowsy and languid with some clouding of the mental faculties, and after 4 p. m. he feels mentally alert and fairly comfortable. Do you think intramuscular liver would be of value and can you account for the periodic 10 a. m. to 4 p. m. condition?

P. R. BRIGGS, M.D., Hartland, Maine.

ANSWER.—The adequate treatment of a patient with primary pernicious anemia is an individual problem which must be guided by the response of the patient. From the history of the case cited there is every reason to change from the oral to the intramuscular method of administration. In patients whose gastro-intestinal symptoms are not as pronounced the intramuscular use of liver extract is advisable, as this method assures the physician that absorption will be more complete than when the extract is taken by mouth. With the marked atrophy that occurs in the gastro-intestinal mucosa, abnormal bacterial flora and the rapid peristaltic movements, absorption must be impaired. In this particular case the number of capsules required by mouth may in themselves aggravate the gastro-intestinal symptoms of nausea, anorexia and diarrhea described.

While the dosage of hydrochloric acid was not noted, it should be appreciated that as a rule too little acid is given. The amount of diluted hydrochloric acid U. S. P. is seldom given in quantities which would equal that produced by a normal person. Not less than from 6 to 12 cc. should be given three times daily, well diluted in water. In a considerable proportion of cases the administration of hydrochloric acid may markedly alleviate the gastro-intestinal symptoms, including the disappearance of the glossitis and sore mouth. Virtues of acid therapy other than these may be said to rest on an uncertain basis.

It would seem advisable to administer iron (inorganic) in some form, as often patients with persistent gastro-intestinal symptoms have in addition a deficiency of iron and thus lack this element for the maximum production of red blood cells and hemoglobin. Iron ammonium citrate, from 4 to 6 Gm. daily, preferably in capsule form, or ferrous sulfate, from 2 to 3 Gm. daily, are two among many of the soluble preparations that will be found satisfactory.

The central nervous system involvement, of course, is characteristic of addisonion pernicious anemia, though the aphasia and mental depression described during remission may possibly be attributed to the age of the patient. Cardiovascular changes especially involving the cerebral vessels may produce similar signs and symptoms without the presence of pernicious anemia. Publications dealing with arteriosclerosis as a complicating factor in the treatment of pernicious anemia point out that such patients require larger daily amounts of liver extract, and about the best that can be expected with regard to the central nervous system is to see that the red blood cells and hemoglobin percentage are kept as near normal as possible (red blood cells 5,000,000, hemoglobin from 85 to 90 per cent). By such treatment it is usually possible to prevent further progress of the lesions of the central nervous system, though the complete disappearance of these symptoms cannot be anticipated in a patient so advanced in age. As to why the attacks of aphasia, drowsiness and the like should occur from 10 a. m. to 4 p. m. it is not possible to say unless the physical activities between these hours produce changes in the cerebral blood supply which are associated with or accentuated by arteriosclerosis of the brain. It might be advisable to obtain samples for blood sugar determination at these times, though disturbances in carbohydrate metabolism are not common in pernicious anemia. Pathological Physiology and Clinical Description of the Anemias, by W. B. Castle and G. R. Minot, Oxford Medical Publications, gives an excellent review of the general care of patients with various types of anemia, which might be helpful.

DYSPNEA

To the Editor:—A man, aged 39, has complained for the last year of a feeling of suffocation, that is, the inability to get air into the lungs, especially when he arises in the morning. The suffocating feeling does not change either when lying down or sitting up. This occurs at varying intervals, ranging from half an hour to several hours. There are some days on which he has none of these symptoms. Accompanying this feeling of suffocation, he may have an occasional dizzy spell and palpitation of the heart, and he quite often has a feeling of anxiety and becomes frightened. In the intervals he is quite cheerful and states that he would be perfectly all right if it were not for the difficulty of getting air into his lungs. He has had dyspnea on severe exertion. A year ago, when I examined him, his blood pressure was 144 systolic, 85 diastolic, pulse 165, and weight 138 pounds (62.6 Kg.). He has not lost any weight during the last year. He had all his teeth removed in 1932 on account of pyorrhea and dental caries. He had a compound fracture of the radius and ulna near the elbow in 1915. He shows inability to pronate and supinate. In 1924 he was caught between a wall and a trolley car and was said to have had several of his vertebrae dislocated. He was treated by a chiropractor for two months, but he has not been bothered with his back lately. He had influenza in 1918. He was bitten by a dog in 1930. Probably no ill after-effects have been apparent. He had his tonsils removed by diathermy in July 1935. The cardiorespiratory system is otherwise negative. The gastro-intestinal tract is practically normal. The genito-urinary system is normal. He has been sleeping well at night. On physical examination his heart, lungs and abdomen are negative to abnormalities. His eyes show internal and external nystagmus. His eyesight has always been poor. The left optic nerve on the temporal side is pale; the pupil reacts to light and slightly to accommodation. He has conductive and receptive deafness in both ears. He has sclerosis of both ear drums. His mouth is normal. The thyroid gland is uniformly but slightly enlarged. The lumbar region is normal. He is able to bend his spine in all directions with ease. Coordination of muscles is normal. The knee jerks are hyperactive. There is no ankylosis. From January 6 to February 3 he was given aqueous solution of iodine, three drops three times daily. His pulse was from 70 to 100, the blood pressure 145/75, and his weight 138 pounds. There was some noticeable diminution in the size of the thyroid but no improvement in breathing. The basal metabolic rate was —19 and —15, Feb. 10, 1935 (Sanborn). His pulse was from 84 to 92, the blood pressure 140/85. He was given 1 grain (0.065 Gm.) of thyroid extract daily for several weeks and phenobarbital with apparently a decrease in the size of the thyroid. Occasionally when he had one of these spells in breathing he would have clonic and tonic contractions in the muscles of his arms and legs, which would last about five minutes. This occurred once or twice, but he was reported not to be unconscious during one of these attacks. The basal metabolic rate several weeks after treatment with thyroid extract was + 5 and + 9 (Jones). The thyroid was much smaller. The hemoglobin in February 1935 was 80 Tallqvist, 56 Sahli. The red blood count was 3,060,000; the Wassermann and Kahn reactions were negative. His voice is normal, with no sign of hoarseness. His vocal cords are apparently in the midline and show no paralysis. At the present time the patient has a good color and is cheerful, and only for his difficulty in breathing he would be all right. The roentgenogram of the chest showed no masses in the mediastinum or any enlargement that would cause pressure. He has stated in the past few weeks that he has had a little difficulty on one or two occasions in swallowing his food, either liquids or solids. Examination of the bronchi, trachea and the esophagus was negative. The roentgenogram of the chest shows no substernal thyroid gland enlargement or mediastinal masses that would cause any pressure on the upper respiratory tract. His difficulty in breathing has become more marked lately and his attacks more frequent. His thyroid gland does not seem to be as large as it was formely. Please omit name and address.

M.D., Connecticut.

ANSWER.—A reply to this question involves a discussion of the causes of dyspnea. The question differentiates between the dyspnea of severe exertion and the difficulty in breathing that constitutes the patient's chief complaint. Dyspnea, however, means difficulty in breathing regardless of the respiratory rate, so the patient's chief complaint must be regarded as dyspnea.

The question rules out most of the common causes for dyspnea. Inspiratory dyspnea, or difficulty in getting air into the lungs, occurs most commonly as a result of obstruction of the trachea or larynx by a foreign body or tumor, an aneurysm of the aorta or subclavian artery, laryngeal spasm, paralysis of the posterior crico-arytenoid muscle, edema of the lung, lung collapse, or massive pleural or pericardial effusion. Most of these seem unlikely in the case under discussion.

The question states that at the first examination the patient was found to have a pulse of 165. It is assumed that this finding was not constantly present together with the dyspnea. A pulse rate of 165 could in itself produce dyspnea, and an abnormal rhythm, such as paroxysmal tachycardia, could easily bring about such a rate. If this assumption is correct, cardiac dyspnea does not seem likely. It is assumed that renal disease does not exist, although the question does not so state. Nor does obstructive dyspnea seem reasonable. The only reasonable explanation seems to lie in a central nervous system or constitutional cause.

A brain tumor irritating the respiratory center seems unlikely because of the lack of further signs of tumor. This is worth consideration, however. The nystagmus and disk pallor suggest a multiple sclerosis, but this condition is not usually associated with dyspnea. Postencephalitic parkinsonism is characterized by dyspnea, but this patient shows no symptom other than the dyspnea.

The convulsive seizure raises the question of parathyroid disease. Did the seizure resemble parathyroid tetany? Tetany is often accompanied by laryngeal spasm, which would produce dyspnea. This possibility should be investigated.

Did the negative Wassermann and Kahn reaction include the spinal fluid or only the blood?

Lastly a functional disturbance must be considered. A neurosis may produce dyspnea and the unexplained dysphagia is highly suggestive. An anxiety neurosis will cause a pulse of 165. It is unwise, and even dangerous at times, to assume that a neurosis is responsible for such a condition without working out all possible organic causes.

EFFECTS OF TRAUMA ON HEART

To the Editor:—About four months ago I first saw a man, aged 52, who was complaining of pains in the lower part of the chest and the upper part of the abdomen, anorexia, nausea, loss of weight and constipation. The patient was in perfect health up until one month before my first visit, when he was struck by a radiator casing, which fell from the second story of a building and landed on the lower part of his chest and abdomen. From the day of the accident until his death five months later his course was progressively downward, with the chief complaints being pains in the epigastrium, nausea, anorexia, constipation and insomnia and the loss of 60 pounds (27 Kg.). X-ray examination of the chest after the accident revealed no fractures. Examination of the patient one month after the accident revealed his heart slightly enlarged with the tones of fair quality. The liver was enlarged to four fingerbreadths below the costal arch (there was a history of alcoholism) and it had several irregular masses on the surface. There was tenderness in the epigastrium. The patient finally died of heart failure. Complete x-ray examination of the gastro-intestinal tract, one month before death, revealed no evidence of cancer. In view of the fact that the patient was in perfect health before his injury and had a downward course until death following the accident, is it possible in any way to make some connection between cause and effect in relation to the injury and some internal injuries? Please also give me references as to where I can find similar cases of traumatic origin. Please do not publish name.

M.D., New York.

ANSWER.—With a history of perfect health before the injury and progressive weakness until death five months later apparently from cardiac changes, one must consider traumatic injury to the heart.

The history of epigastric pain, loss of appetite and weight with enlargement of the liver would suggest some abdominal change such as cirrhosis of the liver or chronic passive hyperemia. The nodular feeling would suggest a malignant condition such as metastases from a carcinoma of the body or tail of the pancreas. This and other pathologic changes in the abdominal viscera of traumatic or other origin cannot be excluded. Certainly without a postmortem examination no definite diagnosis can be made.

Bright and Beck (Nonpenetrating Wounds of the Heart, *Am. Heart J.* **10**:293 [Feb.] 1935), in reviewing cases in the literature in which traumatic injury to the heart was survived, found that in practically all instances the symptoms developed immediately and persisted until recovery. In one instance the symptoms disappeared and the patient resumed work but died suddenly ten months after the injury. From experimental observations Beck (Contusions of the Heart, THE JOURNAL, Jan. 12, 1935, p. 109) believed that the onset of cardiac symptoms may be somewhat delayed in certain cases, although further data are necessary. Usually after experimental trauma to the heart there was a tachycardia but occasionally it slowed later. The electrocardiographic changes may resemble coronary disease and ventricular fibrillation.

The Kahns (Cardiovascular Lesions Following Injury to Chest, *Am. Int. Med.* **2**:1013 [April] 1929) described the development of symptoms which is necessary to place the responsibility of cardiac damage on the injury from an industrial or compensation standpoint.

Briefly these constitute: An injury to a healthy person who was able to pursue his occupation previously. The development of cardiovascular symptoms that would indicate aggravation of an existing lesion or damage to a normal heart. The time that elapses between the injury and pain, dyspnea, and rapid or irregular pulse must be short.

Schlomka (Die akute traumatische Herzdilatation, *Verhandl d. Deutsche gesselsch. f. inn. Med.* **45**:**220**, 1933) found that definite changes of the heart could be produced by trauma experimentally as evidenced by electrocardiography with changes in the rate and regularity of the pulse. There was an early increased arterial and especially venous pressure, but with more extensive trauma there developed dilatation of the heart, symptoms of shock and cerebral anemia. Experimental work indicated that there may be permanent damage to the heart muscle from severe trauma, without rupture.

STAINING FROZEN SECTIONS FOR TUBERCLE BACILLI

To the Editor:—I would appreciate very much any information as to the most reliable method of staining frozen sections for the identification of the tubercle bacillus.

R. F. MILLET, M.D., Glasgow, Mont.

ANSWER.—H. J. Corper (Methods of Staining Tubercle Bacilli, *J. Lab. & Clin. Med.* **11**:503 [March] 1926) studied a large variety of staining methods for tubercle bacilli, from which he concluded that for practical purposes the simple steaming carbolfuchsin (Ziehl-Neelsen) method for staining tubercle bacilli or one of its modifications is to be recommended and suggested (A Control Method in Staining Smears for Tubercle Bacilli, *Arch. Path. & Lab. Med.* **1**:93 [Jan.] 1926) that the student practice the technic of staining tubercle bacilli on known positive tuberculous material for control. The carbolfuchsin technic is adaptable to all kinds of pathologic specimens containing acid-fast bacilli when appropriately used. Sections require a little longer staining than smears of pus or sputum. When chemical fixative is present, E. G. D. Murray (*J. Path. & Bact.* **27**:118 [Jan.] 1924) removes formaldehyde by means of ammonia before staining frozen sections; Marbais (*Schweiz. med. Wchnschr.* **62**:377 [April 16] 1932) points out that iodine inhibits the acid-fast reaction; this should be removed preferably by appropriate neutralizing or washing before staining with the fuchsin. Basic stains as a rule are suitable for staining, a standardized basic fuchsin being preferable. Usually the removal of interfering chemicals will make frozen sections adaptable to staining with carbolfuchsin for acid-fast bacilli, but Emma S. Moss (*U. S. Vet. Bur. M. Bull.* **6**:590 [July] 1930) presents the following method for staining tissues containing tubercle bacilli by the frozen section technic:

Fixation over night in 4 per cent solution of formaldehyde or boiling a few minutes in 40 per cent solution of formaldehyde to which a few drops of acetic acid have been added.
Wash in tap water to remove fixing solution.
Freeze and cut sections.
Select a thin section for staining and float onto a slide with the aid of a capillary pipet, removing excess of water.
Flood section with 40 per cent solution of formaldehyde for eight minutes.
Remove and flood with water several times.
Slightly overstain with Harris's hematoxylin about thirty seconds.
Flood with water several times, removing the excess.
Stain with Ziehl-Neelsen carbolfuchsin cold for eight minutes.
Remove stain and flood with 70 per cent alcohol or water.
Decolorize to a faint pink with 10 per cent citric acid in 70 per cent alcohol.
Flood with water several times.
Neutralize in 0.5 per cent lithium carbonate.
Flood with water several times.
Dehydrate in 95 per cent alcohol.
Completely dehydrate and clear in terpineol (absolute alcohol may be used).
Completely clear in carbolxylene (phenol 30 parts, xylene 70 parts).
Wash with xylene and mount in Canada balsam.

This method has proved satisfactory with human necropsy material and surgical materials, as well as animal materials. It is possible to cut, stain and examine the tissues within thirty minutes and the sections may be filed as permanent mounts.

BRAIN ABSCESS AND TREATMENT IN BRONCHIECTASIS —CLIMATE OF TUCSON

To the Editor:—My brother, aged 23, developed bronchiectasis following pneumonia in 1934. Since then he has tried most of the routine treatments, including postural drainage, bronchoscopy and autogenous vaccine injections, and he has lived in Tucson, Ariz., for the past two winters. However, he does not feel improved clinically, though the x-ray plates show some evidence of lessening of the process. The latest plate taken (January 29) is reported thus: "There are clouding and mottling and apparently some bronchial dilatations in the area of the descending bronchial branches and spreading out over the dome of the diaphragm on the right. A single fusiform dilatation is seen at the left base." The conclusions are: "Bronchiectasis, moderate in degree, without apparent inflammatory reaction, right base. Bronchiectasis, minimal, without inflammatory reaction, left base. Also, thickened pleura and slight pleural adhesions at right costophrenic angle." Clinically, the patient does not look any worse than he did before onset of the condition; his breath is not foul, although the sputum he brings up is; his finger tips are not clubbed, and he shows no cyanosis. He is attending college at Tucson. What percentage of danger of cerebral abscess is there? Is there any other climate, outside the United States if necessary, that might do him more good than that of Tucson? He tells me that there is a higher humidity this year than ever before. Is there any other nonsurgical procedure that should be attempted first? Please omit name and address.

M.D., New York.

ANSWER.—The fact is well established that brain abscess may be a complication of bronchiectasis; however, it apparently is not a frequent one in the milder cases. Although the mechanism that results in brain abscess is not definitely known, it is believed to be due to infected emboli from the area of disease through the left side of the heart, the aorta and the carotid artery. Others are of the opinion that, since paranasal sinuses are frequently involved in patients who have bronchiectasis, brain abscesses may result from the sinus infections.

If careful examination of the fetid sputum should reveal spirochetes and fusiform bacilli, benefit may be derived from administration of the arsenicals, with particular reference to controlling the odor of the sputum; in some cases definite clearing of the x-ray shadows has been reported. However, when marked dilatations are present it is too much to hope for their disappearance through such treatment. When the arsenicals are used, the best results are obtained from small doses. When fusiform bacilli and spirochetes cannot be demonstrated in the sputum, autogenous vaccines have been employed with some apparent success. Iodized oil introduced into the bronchial tree once every five to ten days, until ten or twelve administrations have been given, is worthy of a trial when the disease is not coming under control by other methods of treatment. Iodized oil probably acts as a lubricant and prevents obstruction of ramifications of the bronchi by mucous plugs. It is believed also to coat the lining of the bronchial tree and thus protect it from irritation. Since the oil has a higher specific gravity than mucus and other material in the ramifications, it gravitates to the most dependent parts and thus facilitates the removal of infected material, thus aiding in the prevention of absorption of toxins.

The climatic conditions at Tucson, Ariz., are as good as can be found anywhere in the world.

POISONING WITH BARBITURIC ACID DERIVATIVES

To the Editor:—I should appreciate some communication in your columns relative to specific measures of value in the treatment of poisoning with the barbiturates. I have understood that picrotoxin has been used and I should appreciate some comment on its value. I have recently read the article in THE JOURNAL giving the Cook County Hospital therapy, but this article does not give any form of treatment that will specifically combat such poisoning. Please omit name.

M.D., Illinois.

ANSWER.—There are at least four differently acting possible antagonists that might be of value in the treatment of barbiturate poisoning, and among these picrotoxin is not by any means the most important or the best established (Status of Picrotoxin, Report of the Council on Pharmacy and Chemistry, THE JOURNAL, Aug. 1, 1936, p. 354). Caffeine with sodium benzoate, given intramuscularly in doses of from 0.2 to 0.4 Gm. every two hours, is perhaps the most rational and safest one. The French have been employing, with reported good success, doses of strychnine sulfate, as high as 10 mg. injected every hour or two. Recovery has occurred after total dosages of 170 mg. (!) and even more, given in the course of several days, doses that would have produced convulsions and death in normal persons. The soluble camphor derivatives, such as metrazol and coramin, also have an experimental as well as clinical background; and again large dosage is being advocated, e. g., from 10 to 15 cc. of coramin, partly intravenously and partly intramuscularly, which doses may be repeated in from half an hour to one hour as required. The occurrence of muscular twitching indicates temporary cessation of administration of these convulsants. In desperate cases one may employ such remedies in succession, provided the results are carefully watched.

DIPHTHERIA OF VAGINA

To the Editor:—Please advise me with regard to treatment of the following case, evidently a chronic vaginitis due to the diphtheria bacillus: A woman, aged 23, otherwise apparently healthy, has had a leukorrhea for the past eighteen months. Repeated smears have been negative for the gonococcus. Hanging drop preparations were negative for Trichomonas vaginalis and the reaction was persistently acid. The condition was considered probably due to a fungus and numerous antiseptic solutions were employed, including merthiolate suppositories and phenylmercuric nitrate. About two months ago further bacteriologic studies were made and smears were reported positive for bacillus diphtheriae. A culture was then made and this was also reported positive for the diphtheria bacillus. The patient was given 20,000 units of diphtheria antitoxin and forty-eight hours later a solution consisting of one part of tincture of iodine to two parts of glycerin was applied locally. A cleansing douche was then used regularly for several weeks. Marked improvement followed this treatment, but the condition did not entirely clear up and has now regressed until it is about as before the antitoxin was given. A recent smear was again reported positive for the diphtheria bacillus. The exudate is not profuse. It is white and of a caseous consistency. I will appreciate greatly any suggestions as to further treatment.

M.D., Georgia.

ANSWER.—Genuine diphtheria of the vagina is rare, but the bacteriologic studies in this case would seem to leave no doubt as to the correctness of the diagnosis. The chief reliance in treatment must of course be the use of diphtheria antitoxin, and it would seem wise to repeat the former dosage of this substance after determining possible sensitivity, especially as such definite improvement then followed its use. In addition to such local antiseptic and cleansing measures as have been used, the employment of lactic acid douches, in a strength of from 0.5 to 1 per cent, may be of benefit.

ACUTE GRANULOPENIA

To the Editor:—We recently had in our hospital a white woman, aged 48, with an acute fulminating agranulocytic angina characterized by sore throat and marked glossitis. The throat clinically appeared to have an acute streptococcic infection with exudate on both tonsils and the postpharyngeal wall. The tongue was markedly swollen, so that it could not be protruded from the mouth, inhibiting both speech and swallowing. The floor of the mouth was edematous, and there was an associated cervical adenitis. The temperature ranged from 104.4 on admission to about 102 before death. The tongue became progressively worse and gangrenous appearing on its dorsal surface. The patient had been taking tablets for reduction of weight and I am attempting, if possible, to ascertain their nature. The blood count revealed 4,700,000 red blood cells, 250 white cells, all lymphocytes; no granulocytes were seen on smear. The count repeated again shortly after admission revealed only 50 cells with a complete agranulocytosis. We gave pentnucleotide transfusion. However, the patient died about thirty-six hours after admission. What I would like to know is: 1. Is glossitis a usual feature of agranulocytic angina? 2. What drugs to date have been proved factors in causing agranulocytic angina? 3. Cecil states that one third of these patients have positive blood cultures. This patient had a hemolytic streptococcus septicemia. Would this be primary or secondary as a terminal event? 4. What is the lowest white cell count reported in the literature on this condition? 5. What is the final status of pentnucleotide? Has any other more effectual preparation supplanted it—and altered the prognosis?

P. G. BAKER, M.D., Hartford, Conn.

ANSWER.—1. Vincent's or streptococcic infections commonly develop in the mouth, involving the posterior nasopharynx, soft palate, gums, and not infrequently the tongue during an acute agranulocytic episode.

2. Aminopyrine, dinitrophenol, benzene, acetanalid, arsphenamine, neoarsphenamine and certain proprietary mixtures of aminopyrine and barbital preparations have all been reported in an etiologic relationship to acute granulopenic states.

3. A survey of the literature reveals more than 70 per cent positive blood cultures in cases of acute granulopenia in which this examination was recorded. A primary bacterial focus followed by septicemia may overwhelm the bone marrow and produce a secondary and terminal leukopenia; however, it has been definitely proved that in many, perhaps in the great majority, of instances of agranulocytic angina, the granulopenia precedes the actual invasion of tissues and blood stream by bacteria.

4. Cases have been reported in which serial blood studies were made without disclosing a single white cell after a prolonged search of a single drop of blood.

5. Whether nucleic acid derivatives act as specific granulopoietic stimuli or simply as nonspecific irritants, there can be little doubt in the mind of the physician who has had a con-

siderable experience with this disease that remarkably prompt recoveries follow the intramuscular administration of the nucleotides. From a study of the myelocytic response, which in all essential respects parallels the reticulocyte response during recovery from anemia, it is difficult to escape a causal relationship between nucleotide therapy and renewed bone marrow activity. The experimental studies in animals strongly affirm the specificity of the granulopoietic stimulus inherent in the nucleotides. Intramuscular liver therapy may also be employed. Great care must be exercised in the differential diagnosis of leukopenic states to avoid attributing failures unjustly to treatment when the underlying mechanism may really be misjudged.

OVARIAN DYSFUNCTION TOGETHER WITH EMOTIONAL DISTURBANCE

To the Editor:—I am caring for a woman, aged 23, whose weight is 118 pounds (53.5 Kg.). She complains of weakness, infrequent sparse menstrual periods and peculiar epileptiform seizures. The seizures appear mostly during the night but occasionally appear in the day time preceding meals or following meals when she has had noodles or sphagetti. Those seizures which appear during the day are not preceded by an aura. She is aware of the fact that she has them and they usually do not last more than two or three minutes. During the time she is so affected there are perspiration, marked tremor, and inability to speak or breathe properly. This entire train of symptoms followed an appendectomy for acute appendicitis in 1932. They have been successively diagnosed as hysteria, nervous shock and petit mal epilepsy. Owing to the appearance of these seizures during the night, when she was hungry, or after meals that contained little carbohydrate (when noodles were substituted for potatoes in meals) a provisional diagnosis of spontaneous hypoglycemia was made and verified by blood sugar determinations. Fasting blood sugar was 60 mg. per hundred cubic centimeters. The dextrose tolerance test after 100 Gm. of dextrose was: thirty minutes later, 80 mg.; sixty minutes later, 100 mg.; two hours later, 70 mg.; four hours later, 70 mg. I should like to know just how this case should be treated. The physical examination is negative; other laboratory procedures, such as the Wassermann test, blood count and urinalysis, give normal results. The patient would rather not be subjected to exploratory operation for examination of the pancreas.

M.D., New York.

ANSWER.—The description of the seizures and the history of the case seem to argue against a diagnosis of petit mal epilepsy. It seems much more likely that this condition is in the nature of some emotional or functional disturbance associated with the ovarian dysfunction. There is no particular reason why hypoglycemia should follow a meal of noodles or spaghetti. These foods are made of wheat, which is 76 per cent carbohydrate. Therefore, unless the patient is allergic to wheat there is no reason why the disturbance should follow the ingestion of these foods. It would be advisable to repeat the dextrose tolerance tests. There are individuals who may have low fasting blood sugars, and there have been several cases of hyperinsulinism or hypoglycemia reported which on further checkup have been found to have a normal dextrose tolerance. In a report on this test there should be included the amount of dextrose given and the patient's weight and height at the time. Before extensive treatment is instituted there should certainly be at least one additional dextrose tolerance test. The blood sugar determinations must be done by a competent technician. In case of definite hypoglycemia, dextrose may be given in any of the desired forms every two hours between meals. A large amount should be taken before going to bed and immediately on arising. Additional dextrose must be provided before or during any severe muscular exertion.

SODIUM CHLORIDE INJECTIONS FOR VASCULAR OCCLUSION IN LIMBS

To the Editor:—Please give me instructions for the treatment of arterial occlusion in the lower extremities. It is not extreme and there is no gangrene; marked intermittent claudication occurs on walking any distance. I should like to try intravenous concentrated sodium chloride but want your recommendations and also the amount, frequency of use and concentration found best for intravenous use. Is sodium citrate better? Please omit name if published.

M.D., Wisconsin.

ANSWER.—If the patient is not over 60 years of age and if his heart and kidneys are sound, treatment by means of intravenous injections of sodium chloride solution offers a safe means of improving the circulation in the lower extremities. Sodium chloride is better than sodium citrate because it is less toxic. Five per cent sodium chloride solution is made up in freshly distilled water and immediately sterilized. If this precaution is not followed, bacteria will grow in the distilled water and later sterilization will result in a solution that contains foreign protein matter. If any chills or fever reaction follows the treatment, it is an indication that the solution has been improperly prepared. For the first treatment 150 cc. is given, and all subsequent injections are of 300 cc. Treatments are given three times a week on alternate days for a few months, and the frequency of treatment is gradually reduced as the patient improves. The injections are given in the vein of the arm with the patient lying down and should take about ten minutes. Absolute cessation of smoking must be enforced. The feet should be protected from injury, and minor surgery of any kind should be avoided.

PERSISTENT RHEUMATIC INFECTION WITH HEART COMPLICATIONS

To the Editor:—A 17 year old, well developed, farmer lad during a cold in January developed pain over the left anterior portion of the chest, a continuous pricking sensation. There was a fever of 99 F., pulse 106, and blood pressure 155 systolic, 100 diastolic. Two weeks later during snow-blocked roads a brother gave me these symptoms: fever, sweating, joint pains, pain over the heart, tachycardia and palpitation at times and nosebleeds. My diagnosis was rheumatic fever with endocarditis and myocarditis. The urine was negative microscopically and macroscopically. I have treated him with large doses of sodium salicylate continuously up to the present time. In April an abscessed tooth was extracted and in May I removed his tonsils under local anesthesia. At the present time examination shows damage of the mitral valve (regurgitation and some stenosis). The systolic blood pressure varies between 130 and 140; the urine is normal; temperature is 98.8; some sweating occurs. He feels well, eats well and sleeps well. It is now about six and one-half months since the first signs of disease appeared and his pulse still remains between 120 and 130, of good quality and regular. There is no ankle edema, no cough, the heart is not enlarged and I find no evidence of pericardial involvement. What causes the continued rapid pulse or what hints could you suggest toward further investigation in this case? Please omit name.

M.D., Wisconsin.

ANSWER.—It seems quite certain that the patient is still suffering from acute rheumatic infection, even though the joint symptoms have subsided. His slight elevation of temperature, sweating and tachycardia all indicate persistent activity of the rheumatic process, which, it is known, can continue for many months or even a year or two, especially in childhood. There is undoubtedly rheumatic myocardial involvement, probably with some dilatation of the heart to account for the murmur at the cardiac apex suggestive of mitral stenosis, even though the heart does not seem to be enlarged. If he has had previous rheumatism he may actually have mitral stenosis, but until the present infection subsides it is impossible to say how much valvular deformity he now has, for dilatation of the heart in such a young person will produce the same murmurs caused by mitral valve deformity.

The patient should have further observation for persistent infection, a four hourly temperature chart should be kept, leukocyte counts should be made once or twice a week, and the blood sedimentation rate should be determined. If he continues to feel well and these tests are all negative, the infection may be considered to have subsided. Until such evidence is obtained, however, he should continue with rest treatment. No drugs are needed; in fact, the omission of salicylates may reveal more definite fever (masked recently by the drug). He should be afebrile for a fortnight at least while not on salicylate therapy before he is allowed out of bed.

OPTIMAL PERIOD OF FERTILITY

To the Editor:—A woman, aged 25, sterile of undetermined cause, desires pregnancy. She is receiving medical treatment and tubal inflation. When is the optimal time for conception? She has a twenty-eight day cycle, menstruation lasting six days. When do the "sterile" periods exist and are they absolute? Please omit name.

M.D., Canada.

ANSWER.—The sterile days in a twenty-eight day cycle are composed of the first nine days of the cycle (the count beginning with the first traces of the flow) and the last eleven days of the cycle. The division of time would be expressed by 9-8-11, indicating nine days of sterility, eight days of fertility and eleven days of sterility. Within the fertile period the optimal time for conception is the fourteenth day of the cycle, being the day on which ovulation occurs in a twenty-eight day cycle.

The menstrual histories of 2,000 women accurately recorded for periods ranging from eight months to several years and contained in an article published in THE JOURNAL Oct. 19, 1935, page 1241, indicate that no woman has an invariable cycle. Variations of one, two or more days will always be found in a written menstrual record of eight months or more. The optimal time for conception in a twenty-eight day cycle, as well as in a cycle of any other type, is shown graphically in chart 1 of this article.

Absolutism in physiologic laws is nonexistent. Chart 3 in the article referred to indicates that normal, healthy women, with regular menstrual histories (i. e., with variations of not more than eight or ten days) can employ the sterile periods with satisfaction.

NONUNION AFTER FRACTURE IN DIABETES

To the Editor:—A man, aged 73, single, has had diabetes for eight years, kept well under control. The diet consists of protein 79 Gm., carbohydrate 141 Gm. and fat 100 Gm. daily. The diet contains 240 Gm. of milk three times a day and also all proper vitamins. The amount of insulin is 20 units before breakfast, 8 units before the noon meal and 10 units before supper. The blood sugar is 135 mg. fasting. The body weight appears to be about right. The temperature is 98 F., pulse from 70 to 74, and respiration 20. He has no goiter, but the metabolic rate was plus 23 in April. March 27 he sustained a fracture of the right femur. Since then the fragments have been in a Hodgen splint, which keeps them in fair position. July 5, x-ray examination showed no new bone formation. At that time the blood calcium was 7.8 mg. (normal would be from 9.5 to 10 mg). Since then I have given the patient 15 grains (1 Gm.) of calcium gluconate and 10 drops of viosterol three times a day. July 25 the blood calcium was 7.47 mg. Still there is no new bone formation. What can be done to cause new bone formation? Please omit name. M.D., Missouri.

ANSWER.—This may be merely a delayed union, and long and continuous use of conservative treatment may result in union. It is not stated whether the fracture is through the neck, through the intertrochanteric region or through the shaft of the femur, but the fact that treatment with a Hodgen splint maintains good position would indicate that the fracture is in the shaft. If union becomes too much delayed, it would be wise to drill several holes in each fragment with a one-eighth inch drill. This frequently stimulates the growth of callus and hastens union. If definite nonunion results, an autogenous bone graft may be necessary, and the indications and the contraindications for an operation of such severity must carefully be weighed, before advising it.

BENIGN PLAQUES OF THE TONGUE

To the Editor:—A child, aged 4 years, has for the past few months had what appears to be a ringworm of the tongue. It starts as a slight depression on the tongue, smoother in appearance than the rest ot the surface. It gradually spreads about 3 mm. in thickness, the center becoming normal and finally covering half of the tongue. This condition lasts from two to three and one-half weeks and disappears. There are often four or five of these lesions at a time or successive crops folowing one another. It gives no inconvenience to the child. All other physical signs are negative and irrelevant. The parents are worried for fear it may develop into something else later. I have not been able to find a description or the treatment of this condition in any of the books on hand. Please discuss. Kindly omit name. M.D., California.

ANSWER.—The symptoms detailed conform, on the whole, to a clinical description of the condition known as transitory benign plaques of the tongue, or glossitis areata exfoliativa, and is described in most of the larger textbooks on dermatology. Many of the patients are delicate children, and debility seems to be an exciting or predisposing cause.

The condition may follow a clinical course marked by exacerbations and remissions. Treatment consists in constitutional remedies to correct any deviations from the normal, such as anemia and marked constitutional debility. High vitamin feedings and the use of antianemic substances are indicated. Local irritation should be reduced to a minimum, and the use of a bland diet and soothing astringent lotions and mouth washes is in order. Serious sequelae, as a rule, are not noted in this condition.

LEUKONYCHIA AND ONYCHOLYSIS

To the Editor:—A man, aged 37, 6 feet (183 cm.) tall, weighing 195 pounds (88.5 Kg.), married, a salesman, began to notice a gradual whitening and then a cracking of the fingernails five years ago, beginning at the edge of the cuticle. A number of such white cracking areas gradually appeared on the nail. The nail gradually loosened up. The nail becomes hard and brittle, and striking the nail against anything solid breaks it. The only treatment given, to my knowledge, was capsules of vitamin B. Please give me what information you can regarding the diagnosis and treatment. Please omit name. M.D., Wisconsin.

ANSWER.—From the description the patient apparently has a combination of leukonychia and onycholysis. The cause of these conditions is obscure. The separation and loss of the nail, together with increased fragility, sometimes occurs as a symptomatic process in psoriasis, eczema and syphilis. Idiopathic neurotic cases have also been described. In some of these patients there is associated hyperhidrosis. The possible contributory factor of external irritants in the course of occupational contact must be borne in mind.

The response to treatment in these cases is quite variable. Protection of the nail from trauma, the application of bland oils and ointments, and the use of a high vitamin diet fortified by the administration of vitamins A, B and D is of value. Dicalcium phosphate by mouth is also a useful adjunct to therapy.

NEURITIS DURING PREGNANCY

To the Editor:—A woman, aged 35, in her first pregnancy, had pyelitis two years ago and one year ago. The urine has been normal since conception in April. In May there was numbness over both lateral cutaneous nerves of the thigh. In June an occasional pain was felt in the nerves, and numbness was continuous. By July the pain was considerable, requiring acetylsalicylic acid. There has been no change in the area of the numbness or the pain. The urine, blood pressure, teeth, tonsils, bowels, Wassermann reaction, blood sugar, gain in weight, habits and attitude are all normal. In August, bromides were required for rest at night. Please omit name. M.D., Texas.

ANSWER.—Pain over the distribution of both lateral cutaneous nerves during pregnancy is extremely unusual. The most common site for root pains in pregnancy is in the distribution of the sciatic nerves. It is possible that the gravid uterus by pressure upward has involved the lateral cutaneous nerves as it passes through a tunnel in the inguinal fascia; or the wearing of a special corset during pregnancy or for that matter the change in posture, although a corset worn before is used, may shift pressure on these nerves, causing pain on the lateral thigh surfaces, known to neurologists as meralgia paraesthetica. The treatment should consist of removing all tight constriction from the inguinal region. In any case, relief is to be expected on termination of the pregnancy.

DERMATOMYOSITIS

To the Editor:—A clerk, single, aged 21, had pain and tenderness in the right thigh and in the back of the left knee. He stated that he had four or five previous attacks of this nature in the past few years. They had always followed a toothache and his dentist did not care to remove the offending tooth for some time because of orthodontic work that was being done. The patient's temperature was 102.2 F. and pulse 84. His right lower first molar was carious. The rest of the physical examination was without significance except in the lower extremities. The right sartorius muscle was clearly defined by redness, swelling, heat, tenderness and induration. A similar condition was observed for the left popliteus muscle. There was no evidence of fluctuation. Conservative treatment—rest, fluids, analgesics and hot applications—was prescribed. In two days the symptoms had abated but there was still some induration at the site of these muscles. By the fourth day even this had subsided. I would like to ask whether a diagnosis of acute suppurative (aborted) myositis is justified. If not, what are the diagnostic possibilities? How common is the condition in this country? What further treatment should the patient have besides the removal of the apparently offending tooth? If published, please omit name. M.D., New York.

ANSWER.—This is an unusual case and might be a dermatomyositis. The condition is uncommon in this country, most of the cases of infectious myositis having originated in Europe. The local treatment would be symptomatic. There is no question that the tooth should be removed and, if pus is found, a vaccine made in case it is desired to administer it.

TREATMENT OF PAGET'S DISEASE

To the Editor:—I have a female patient, aged 52, whose illness has been diagnosed by several competent clinicians as nonsyphilitic Paget's disease of the bones, which at present involves the cranium, pelvic bones, legs and one arm. Each physician has discouraged the patient as to treatment and prognosis. She has appealed to me for relief of her severe headaches and leg pains. Please inform me of the latest developments in this disease, if any, and the best treatment for the relief of her pains. Please omit name. M.D., Wisconsin.

ANSWER.—The treatment for Paget's disease of the bone is still highly unsatisfactory except for orthopedic measures. The administration of high doses of viosterol together with daily intravenous injections of calcium has been recommended. For palliative purposes of relief of the intolerable pain, in some instances irradiation with small amounts of x-rays or radium to the involved area may be successful.

PIGMENTATION OF VACCINATION SCAR

To the Editor:—I have a child, 7 years of age, who was vaccinated ten months ago for smallpox by another physician. A hematoma formed at the site of the vaccination and was surgically removed in May 1936. The vaccination scar is entirely healed but there is still considerable discoloration of the skin about an inch in diameter at the site of an old hematoma. The child's mother is much concerned as to whether this discoloration will ever entirely disappear. Please omit name. M.D., Wyoming.

ANSWER.—The discoloration and pigmentation of the skin at the vaccination scar is the result of pigment deposited at the site. The pigment in this instance is most probably derived from the blood (an old hematoma), in which case it contains iron and is situated in the dermis. There may also be asso-

ciated pigmentation resulting from a clumping of pigment cells (chromatophores) or from melanoblasts produced by stimulation of cells as the result of the local irritation.

While there will probably be some decrease in the pigmentation over a period of time, the possibility of residual pigmentation of a permanent character is not unlikely. Success in removal of this pigment will depend a great deal on the depth of the pigment cells in the skin. The use of the cautery, carbon dioxide snow or other superficial destructive measures may be necessary to secure complete eradication of the pigment after sufficient time has elapsed to allow for spontaneous involution.

EFFECTS OF ARSPHENAMINE IN CANCER

To the Editor:—Does the administration of arsphenamine to a patient suffering from cancer of the gastro-intestinal tract, but not having syphilis, have a deleterious effect? That is, does it stimulate the growth and hasten the patient's death? I shall appreciate your giving me references on this subject. It seems that the literature is not very specific. Please omit name.

M.D., Ohio

ANSWER.—There seems to be no authentic evidence indicating that the administration of arsphenamine to a patient suffering from gastro-intestinal cancer stimulates the growth or hastens death.

OPACITY OF CORNEA IN DOGS

To the Editor:—Recently there appeared in Queries and Minor Notes an inquiry by M.D., Pennsylvania, relative to opacity of the cornea in dogs. Unfortunately, no statement was made as to the age and breed of the animal and whether or not the animal was or had been suffering from any constitutional ailment. No mention was made of the presence or absence of vascularization and the extent, depth or form of the opacity. Primarily opacities of the cornea usually appear as leukoma in dogs. In most cases they apparently are noninflammatory and appear to arise spontaneously and are not related to trauma. They frequently disappear with treatment and will later recur. Vitamin A deficiency is not an etiologic factor in these cases. In a few cases the opacity results from an interstitial keratitis. Leukoma frequently accompanies an attack of distemper and it is comparatively resistant to treatment. However, inflammatory changes are absent in these cases, in contradistinction to ulcerative keratitis, which also occurs frequently in this disease.

It appears that breeds such as the Boston terrier, with protuberant eyes, are more commonly affected.

In spite of the fact that treatment has not been very successful, application of the following agents may greatly help to cause resolution of the opacity: massage with 5 per cent yellow mercuric oxide ointment three times a day; instillations of ethylmorphine hydrochloride or intramuscular injections of from 5 to 10 cc. daily of sterile milk and potassium iodide in 2 grain (0.13 Gm.) doses three times a day. While there is nothing new about this treatment, the results obtained amply justifies its usage. However, it is necessary to apply this treatment for weeks and months, as some of these cases take a long time to clear up.

The diet should consist of plenty of raw or cooked meat, milk, cereals and very little vegetables.

FRANK BLOOM, D.V.M., Flushing, L. I., N. Y.

BENZENE POISONING

To the Editor:—A case of benzene poisoning referred to in Queries and Minor Notes on page 2073 of the Dec. 19, 1936, issue of THE JOURNAL prompts me to communicate to you an observation made recently in a case of severe chronic benzene poisoning.

The patient, a worker engaged on the benzene plant of a gas works, showed symptoms like those of scurvy (hemorrhagic purpura, leukopenia, dental hemorrhagia, relative lymphocytosis). I therefore proceeded to the determination of his vitamin C deficiency with the help of the "saturation test," outlined by Harris and Ray (*Lancet* **1**: 71 [Jan. 12] 1935). Cevitamic acid was administered in daily doses of from 200 to 400 mg. intravenously and orally. To my amazement, 11.5 Gm. of cevitamic acid (of which 6.3 Gm. was given intravenously) was necessary before saturation was attained, recognizable by excretion of the excess of cevitamic acid in the urine. This quantity is equivalent to the maximum amounts of cevitamic acid necessary, according to the literature, for covering vitamin C deficiency in cases of severe scurvy. After saturation was reached, the objective and subjective state of the patient had been greatly improved, but he still needed rather high amounts of cevitamic acid to cover his daily requirements (after three weeks of normal diet 0.9 Gm. of cevitamic acid was again necessary to "saturate" him). The relationship between benzene poisoning and vitamin C deficiency is being discussed in a paper which I have submitted to the *Zeitschrift für Vitaminforschung*. My experience has just been corroborated in the paper of Cathala, Bolgert and Grenet: Scorbut chèz un sujet soumis à une intoxication benzylique professionelle (*Bull. et mém. Soc. méd. d. hôp. de Paris* **52**: 1648 [Dec 21] 1936), describing a similar case which was successfully treated with vitamin C in the form of high doses of lemon juice. According to guinea-pig tests carried out together with Dr. V. Demole of Basle, chronic benzene poisoning inhibits the normal storing of cevitamic acid in the adrenals and liver and increases the demand for vitamin C. In cases of benezene poisoning it seems therefore worth while to keep in mind the possibility of vitamin C deficiency and eventually remedy it.

A. MEYER, M.D., Basle, Switzerland.

Council on Medical Education and Hospitals

BUSINESS MEETING HELD BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS IN CHICAGO FEB. 14, 1937

1. The meeting was called to order at 10:30 a. m. Those present included Drs. Ray Lyman Wilbur (chairman), Charles E. Humiston, Frederic A. Washburn, John H. Musser, Fred Moore, Reginald Fitz, Fred W. Rankin, William D. Cutter (secretary), Herman G. Weiskotten, Carl M. Peterson, Oswald N. Andersen and Mr. Homer F. Sanger. Also present were Dr. Charles Gordon Heyd, President, and Dr. Olin West, Secretary of the American Medical Association.

2. It was resolved that the minutes of the business meeting of Oct. 11, 1936, be approved.

3. Concerning schools that do not offer a compiete medical course, the following statement was prepared and approved:

SCHOOLS OF THE MEDICAL SCIENCES

Following the recent survey of the medical schools it was decided that, effective July 1, 1939, the Council will publish a list of schools which teach acceptably gross and microscopic anatomy, biochemistry, physiology, pharmacology, bacteriology and pathology, even though they do not offer a full course leading to a medical degree.

The acceptance of courses involving the use of clinical material shall be left to the discretion of the faculties which admit to advanced standing students transferring from approved schools of the medical sciences.

Surveys of the clinical courses and facilities will be made by the Council and reported to the individual medical schools upon request.

4. It was resolved that the American Board of Obstetrics and Gynecology be approved.

5. It was resolved that the American Board of Internal Medicine be approved.

6. It was voted to approve the lists of schools for clinical laboratory technicians recommended by the staff.

7. It was voted to approve the lists of hospitals and other institutions recommended by the staff.

8. It was resolved that the Council on Medical Education and Hospitals express to Dr. Herman G. Weiskotten of Syracuse and Rev. Alphonse M. Schwitalla, S.J., of St. Louis its profound appreciation of their invaluable service in connection with the appraisal of medical schools and the preparation of pattern maps, and the secretary was instructed to convey to these gentlemen an official acknowledgment of its indebtedness to them for so important a contribution to the success of the survey.

WILLIAM D. CUTTER, M.D., Secretary.

ADDITIONAL HOSPITALS APPROVED

The Council on Medical Education and Hospitals of the American Medical Association has given its approval to the following hospitals since the publication of the last previous list in THE JOURNAL, Oct. 24, 1936:

Hospitals Approved for Intern Training

U. S. Naval Hospital, Mare Island, Calif.
U. S. Naval Hospital, San Diego, Calif.
Franklin Hospital, San Francisco.
U. S. Naval Hospital, Washington, D. C.
Broadlawns Polk County Public Hospital, Des Moines, Iowa.
Providence Hospital, Kansas City, Kan.
U. S. Naval Hospital, Chelsea, Mass.
Leila Y. Post Montgomery Hospital, Battle Creek, Mich.
St. Louis County Hospital, Clayton, Mo.
Evangelical Covenant Hospital, Omaha.
U. S. Naval Hospital, Brooklyn.
Braddock General Hospital, Braddock, Pa.
Nesbitt Memorial Hospital, Kingston, Pa.
U. S. Naval Hospital, Philadelphia.
Valley Hospital, Sewickley, Pa.
Norfolk Naval Hospital, Portsmouth, Va.

Hospitals Approved for Residencies in Specialties

Grace Hospital, New Haven, Conn. Medicine and surgery.
Mount Sinai Hospital, Chicago. Pathology.
Ball Memorial Hospital, Muncie, Ind. Pathology.

St. Joseph's Hospital, Lexington, Ky. Surgery.
Oakland County Tuberculosis Sanatorium, Pontiac, Mich. Tuberculosis.
Eitel Hospital, Minneapolis. Mixed.
University Hospitals, Minneapolis. Dermatology, medicine, neuropsychiatry, obstetrics-gynecology, ophthalmology, otolaryngology, pediatrics, radiology and surgery.
St. Louis County Hospital, Clayton, Mo. Medicine and surgery.
Brooklyn Eye and Ear Hospital, Brooklyn. Ophthalmology and otolaryngology.
Coney Island Hospital, Brooklyn. Medicine.
Queens General Hospital, Jamaica, L. I., N. Y. Communicable diseases, medicine, obstetrics-gynecology, ophthalmology-otolaryngology, pathology, pediatrics, radiology, surgery and urology.
Kings Park State Hospital, Kings Park, N. Y. Neuropsychiatry.
Loomis Sanatorium, Loomis, N. Y. Tuberculosis.
Marcy State Hospital, Marcy, N. Y. Neuropsychiatry.
New York City Hospital, New York City. Pathology.
Syracuse Memorial Hospital, Syracuse, N. Y. Gynecology, obstetrics and pediatrics.
Hamilton County Tuberculosis Sanatorium, Cincinnati. Tuberculosis.
St. Ann's Maternity Hospital, Cleveland. Obstetrics.
Huron Road Hospital, East Cleveland, Ohio. Obstetrics-gynecology and surgery.
Norristown State Hospital, Norristown, Pa. Neuropsychiatry.
Institute of the Pennsylvania Hospital, Philadelphia. Neuropsychiatry.
Eye and Ear Hospital, Pittsburgh. Ophthalmology-otolaryngology.
Robert Packer Hospital, Sayre, Pa. Medicine and surgery.

Hospitals Approved for Additional Residencies

Children's Hospital, Denver. Orthopedics.
Denver General Hospital, Denver. Pediatrics.
Garfield Memorial Hospital, Washington, D. C. Medicine and obstetrics.
Michael Reese Hospital, Chicago. Physical therapy.
Research and Educational Hospital, Chicago. Neurosurgery.
City of Detroit Receiving Hospital, Detroit. Fractures.
Henry Ford Hospital, Detroit. Obstetrics-gynecology, ophthalmology, orthopedics, otolaryngology, radiology and urology.
University of Nebraska Hospital, Omaha. Gynecology and obstetrics.
Newark Beth Israel Hospital, Newark, N. J. Radiology.
Buffalo City Hospital, Buffalo. Obstetrics-gynecology, tuberculosis and urology.
Buffalo General Hospital, Buffalo. Urology.
Bellevue Hospital, New York City. Dermatology-syphilology.
Lincoln Hospital, New York City. Obstetrics.
New York Polyclinic Medical School and Hospital, New York City. Anesthesia and obstetrics.
St. Luke's Hospital, New York City. Ophthalmology-otolaryngology.
Elizabeth Steel Magee Hospital, Pittsburgh. Medicine.
Roper Hospital, Charleston, S. C. Obstetrics-gynecology and pediatrics.
St. Joseph's Hospital, Milwaukee. Surgery.

Medical Examinations and Licensure

COMING EXAMINATIONS

STATE AND TERRITORIAL BOARDS

Examinations of state and territorial boards were published in THE JOURNAL, March 6, page 832.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* May 10-12, June 21-23, and Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

SPECIAL BOARDS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written examination for Group B applicants* will be held in various cities throughout the country on April 17. *Oral examinations for Group A and B applicants* will be held in Philadelphia, June 7-8. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Practical* examination will be given in St. Louis in April and at Philadelphia in June. Chairman, Dr. Walter L. Bierring, 406 Sixth Ave., Rm. 1210, Des Moines.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Practical, oral and clinical examinations for Group A and B applicants* will be held at Atlantic City, N. J., June 7-8. *Applications must be received at least sixty days prior to the examination dates.* Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh (6).

AMERICAN BOARD OF OPHTHALMOLOGY: Philadelphia, June 7 and Chicago, Oct. 9. *All applications and case reports, in duplicate, must be filed at least sixty days before the date of examination.* Sec., Dr. John Green, 3720 Washington Blvd., St. Louis, Mo.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Philadelphia, June 12. Sec., Dr. Fremont A. Chandler, 6 N. Michigan Ave., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: Philadelphia, June 7-8. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

AMERICAN BOARD OF PATHOLOGY: Chicago, March 26-27. Sec., Dr. F. W. Hartman, Henry Ford Hospital, Detroit, Michigan.

AMERICAN BOARD OF PEDIATRICS: Atlantic City, N. J., June 6. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Illinois.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: Philadelphia, June 2. *To be considered for this meeting, applications must be in the hands of the Secretary before April 2.* Sec., Dr. Walter Freeman, 1028 Connecticut Ave., Washington, D. C.

AMERICAN BOARD OF RADIOLOGY: Atlantic City, N. J., June 4-6. Sec., Dr. Byrl R. Kirklin, Mayo Clinic, Rochester, Minn.

AMERICAN BOARD OF UROLOGY: *Written examinations* will be held in various cities in the United States, April 3. *Oral examination.* Minneapolis, June 25-26. Sec., Dr. Gilbert J. Thomas, 1009 Nicollet Ave., Minneapolis.

Idaho October Examination

Hon. J. L. Balderston, commissioner of law enforcement, reports the oral and written examination held by the Idaho State Medical Examining Board at Boise, Oct. 6-7, 1936. The examination covered 22 subjects and included 135 questions. An average of 75 per cent was required to pass. Nine candidates were examined, all of whom passed. Nineteen physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
College of Medical Evangelists		(1936)	83
Loyola University School of Medicine		(1935)	87
Northwestern University Medical School		(1936)	86, 88
Harvard University Medical School		(1934) 90, (1935)	83
University of Rochester School of Medicine		(1934)	84
University of Oregon Medical School		(1936)	86*
Universität Leipzig Medizinische Fakultät		(1934)	78†

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
College of Medical Evangelists		(1929) (1935)	California, (1936) Oregon
University of Colorado School of Medicine		(1934)	Colorado
Northwestern University Medical School		(1932) (1934)	Wyoming, Utah
Rush Medical College		(1934)	Illinois
University of Kansas School of Medicine		(1906)	Kansas
University of Louisville School of Medicine		(1931)	Kentucky
University of Michigan Medical School		(1928)	Michigan
University of Minnesota Medical School		(1919)	Minnesota
St. Louis University School of Medicine		(1927), (1933)	Missouri
Washington University School of Medicine		(1933)	Missouri
Creighton University School of Medicine		(1929)	S. Dakota
University of Oregon Medical School		(1932), (1933)	Washington, (1934) Oregon
University of Tennessee College of Medicine		(1931)	Tennessee

* License withheld pending completion of internship.
† Verification of graduation in process.

Arizona October Report

Dr. J. H. Patterson, secretary, Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, Oct. 6-7, 1936. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Seventeen candidates were examined, 12 of whom passed and 5 failed. Sixteen physicians were licensed by reciprocity and 4 physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
University of Colorado School of Medicine		(1935)	77.3
George Washington University School of Medicine		(1934)	85.9
Northwestern University Medical School		(1936)	77.9
Rush Medical College		(1935)	77.2
School of Medicine of the Division of the Biological Sciences		(1936)	81.5
Washington University School of Medicine		(1934)	83.2
Creighton University School of Medicine		(1936)	79.9, 80, 80.7
University of Pennsylvania School of Medicine		(1935) (1936)	80.9, 81.8
University of Wisconsin Medical School		(1934)	84.4

School	FAILED	Year Grad.	Per Cent
University of Colorado School of Medicine		(1935)	69.6
Chicago Medical School		(1931) 65, (1935)	71.4
Tulane University of Louisiana School of Medicine		(1936)	71.5
Baylor University College of Medicine		(1934)	67.7

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine		(1925)	Arkansas
College of Medical Evangelists		(1933)	California
Emory University School of Medicine		(1926)	Georgia
Chicago College of Medicine and Surgery		(1914)	Illinois
Loyola University School of Medicine		(1918)	Illinois
State University of Iowa College of Medicine		(1922)	Iowa
Kentucky University Medical Department		(1905)	Oklahoma
College of Physicians and Surgeons of Baltimore		(1900)	Penna.
Tufts College Medical School		(1912)	New York
University of Michigan Medical School		(1927)	Michigan
University of Minnesota Medical School		(1922)	N. Dakota
University of Cincinnati College of Medicine		(1921), (1924)	Ohio
University of Pennsylvania Department of Medicine		(1900)	California
Medical College of the State of South Carolina		(1932)	S. Carolina
Regia Università degli Studi di Padova, Facoltà di Medicina e Chirurgia		(1917)	Illinois

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
College of Medical Evangelists		(1936, 2)	N. B. M. Ex.
Stanford University School of Medicine		(1933)	N. B. M. Ex.
Rush Medical College		(1932)	N. B. M. Ex.

Book Notices

Research in Dementia Praecox (Past Attainments, Present Trends and Future Possibilities). By Nolan D. C. Lewis, M.D., Professor of Neurology, Columbia University. Cloth. Price, $1.50. Pp. 320. New York: National Committee for Mental Hygiene, 1936.

The author spent a year in the service of the thirty-third degree Masons, investigating investigators of dementia praecox for the purpose of adequately distributing a large sum of money set aside by the Masonic order for research in dementia praecox. The fact that the majority of the sum available was allocated to the members of the advisory committee for the continuation of orthodox psychiatry, already languishing under their direction for some decades, might have been compensated for by this survey of existing research ventures in this country. The first chapter indicates the polarities of organic and psychologic points of view and pleads indirectly for a more unified concept of the problem. Then follow utterly useless correlations of the published works from many countries, classified into respective fields of science and variations of approach. There are then five chapters concerned respectively with clinical features, etiology, alterations in structure and structure function (whatever that means), differential diagnosis and therapy. A chapter of conclusions follows. Each chapter is followed by a lengthy bibliography, divided according to year of publication, obviously derived from the index without reading or digestion, as these titles show little correlation with the subject matter of the chapters. As one peruses the material in each chapter one is struck by the numerous quotations from authorities in the mental sciences expressed as ex cathedra pronouncements. However, there is little actual detail concerning what the book purports to present; namely, what American scientists are doing in the field of dementia praecox. In fact, one begins to wonder whether the author actually entered the laboratories of the scientists he visited or limited his investigations to conversations around the luncheon table. The sparcity of these details is not made up for by the inclusion of several of the author's own case abstracts. Certainly the nonclinical investigator could not understand what dementia praecox is from this book. In his short concluding chapter the author outlines what he considers is a plan of procedure in psychiatric research which is as vague as any plan not based on actual working knowledge of the needs of fundamental workers in the field. It indicates, for example, the need of money, the need for propaganda, and the need for scientists well controlled by committees of authorities acting as coordinators. There are no constructive ideas embodied in his plan. Lewis has had a splendid opportunity for learning what is going on in American psychiatry and plucking from the laboratories concerned with the technics of the basic sciences that which can be utilized or modified for the solution of the human plague dementia praecox. His book as a representation of his year's activity indicates the failure of his work and bodes ill for the future "circuit riders of psychiatry."

Endocrinology in Modern Practice. By William Wolf, M.D., M.S., Ph.D. Cloth. Price, $10. Pp. 1,018, with 252 illustrations. Philadelphia & London: W. B. Saunders Company, 1936.

The current years have seen a crowded market for volumes devoted to endocrinology, the result, no doubt, of the tremendous stimulation of research that has occurred in this field. In his preface the author indicates the trepidation with which he undertook the production of this work and his desire to develop a volume primarily for the general practitioner. This volume includes special chapters devoted to each of the glands and then sections concerning various types of disorders recognized as glandular. Supplementing these special considerations is the second portion of the book, which is concerned with the various systems of the body and special medical groups so far as they are concerned with glandular disturbances. The final two divisions are devoted to endocrine diagnosis and endocrine preparations. The volume is illustrated with a considerable number of pictures derived from many different sources. Its organization follows the standard classification developed in Osler's textbook, and each of the chapters is supplemented by a tabular concentration or outline of what has gone before. In a field in which there is vast overenthusiasm and much diffuse knowledge, the author provides an excellent summary. Obviously, most of the doubt in this field is concerned with the application of the knowledge to therapy. Here again the author has exercised admirable restraint in his recommendations. Another unusual feature of the book is the chapter on symptom diagnosis, which is an index by symptoms to each of the special considerations to be found in the volume. The book should be useful to all interested in the field, not so much for its primary contribution as for its value as an outline of our current knowledge.

The Nutritive Value of Fruits, Vegetables and Nuts. By R. A. McCance, E. M. Widdowson and L. R. B. Shackleton. Medical Research Council, Special Report Series, No. 213. Paper. Price, 2s. Pp. 107, with 26 illustrations. London: His Majesty's Stationery Office, 1936.

This is the third in a series of reports on the chemical composition of foods commonly eaten in Great Britain. Many of the methods used in the study of the carbohydrate content of foods (No. 135 in this series) and the chemistry of flesh foods and their losses in cooking (No. 187) were applicable to this study, but methods for the determination of carbohydrates, copper, total and phytin phosphorus, iron and potassium are briefly described and likewise certain modifications in the procedures for determining chlorine and sodium. Analyses are reported on forty-eight samples of fruit and on eighty-two of vegetables, with regard to total available carbohydrate, protein, fat, sodium, potassium, calcium, magnesium, iron, copper, phosphorus and chlorine. Nine varieties of nuts have been similarly analyzed, with the addition of figures for sucrose and starch separately and for "available" nonphytin phosphorus, on the assumption from previous work (McCance, R. A., and Widdowson, Elsie May: *Biochem. J.* **29**:2694 [Dec.] 1935) that phytin phosphorus is not readily available in human nutrition and should be deducted from the total phosphorus.

To offset the disadvantages of analysis of a single sample of a given food, the sample was in each case an aliquot of several samples of the same food grown under different conditions but in the same season. These analyses make valuable additions to our data on a large number of foods. The available carbohydrate includes reducing sugars, sucrose and starch. Starch, protein and fat were determined on the alcohol-insoluble residue, and their sum, deducted from the total alcohol insoluble residue, is called "roughage." Thus the error in the method of the Official Agricultural Chemists of the United States inherent in calculating total carbohydrates "by difference" and determining crude fiber directly is in the case of fruits and vegetables largely transferred to the so-called roughage. In spite of these differences in procedure in the two countries the data for many of the foods compare as closely as could be expected with those of Atwater and Bryant (Bull. 28, U. S. Dept. of Agriculture) or later compilations of Chatfield and Adams (Circular 146, U. S. Dept. of Agriculture, 1931) for fresh vegetables and Chatfield and McLaughlin (Circular 50, U. S. Dept. of Agriculture, 1928) for fresh fruits. The error introduced by using the figure for carbohydrates "by difference" is usually well within the range of values for maximum and minimum on the same food. Thus twenty-nine samples of apples reported by Atwater and Bryant ranged from 8.8 to 21.3 per cent total carbohydrates by difference, averaging 14.2 per cent, with 1.0 per cent fiber, making available carbohydrate 13.2 per cent, while two types of English apples averaged from 9.6 to 12.2 per cent of available carbohydrate with 2.4 and 1.7 per cent of fiber respectively. These differences are so much less than the natural range of samples of the same food that, while it is certainly desirable to have such careful determinations of available carbohydrate, the results of calculation by either method are probably satisfactory for all purposes for which they can be applied. It seems difficult for many workers to realize the enormous variation in vegetable products. When precision is necessary, determinations must be made on every sample used.

In the case of nuts, there is a considerable portion of the total carbohydrate not present as starch or sugar but existing in the form of hemicelluloses, such as pentosans and galactans and cellulose. Morgan, Strauch and Blume (*J. Biol. Chem.* **85**:885 [Jan.] 1930) found only 48 per cent of almond carbohydrate available and Neale (*J. Am. Dietet. A.* **2**:73 1926), investigating peanut meal, found that only about 30 per cent of the carbohydrate estimated by difference was available, or 47 per

cent of the sum of the sugars plus the total acid hydrolyzable carbohydrate from the alcohol insoluble residue, a considerable part of which is known to be pentosans and not available for human beings.

In these studies of McCance and Widdowson the unavailable carbohydrate for almonds is reported as 74 per cent, for Brazil nuts 78, for peanuts 52 and for walnuts (Juglans regia) 82. There are too few analyses of nuts available to make any satisfactory comparisons.

One section of the report is devoted to changes in composition brought about by cooking processes, as steaming and pressure cooking, boiling in water, baking, and cooking in fat (frying and roasting). Many of the changes are expressed graphically. The leaching action of the surrounding water was found to account for nearly all the losses of minerals and sugars incurred on boiling, the extent of loss varying directly with time of cooking and inversely with the size of the pieces; the volume of the cooking water did not greatly affect the losses. The addition of alkali when green vegetables are boiled also had little effect on the mineral losses. Practically, the authors point out, the waste incurred by throwing away the water in which vegetables have been boiled is surprisingly small, conservation of the water not usually serving to increase the total calcium, phosphorus and iron in a mixed diet by more than 3 per cent.

An excellent bibliography is appended.

So You're Going to a Psychiatrist. By Elizabeth I. Adamson, M.D. Cloth. Price, $2.50. Pp. 263. New York: Thomas Y. Crowell Company, 1936.

Many attempts have been made to explain to interested lay persons the meaning of psychiatry and the purposes of psychotherapy. Most works are patently propaganda for so-called mental hygiene or the "Meyerian Legend." These books are usually simple in content and confusing in effect. Dr. Adamson has written an intelligent work concerning psychiatry from the psychoanalytic point of view. Her data are correct and well expressed. However, the material could be understood by few neurotic patients, owing first to their emotional blocking and secondly to the fact that psychoanalytic psychiatry requires considerable intelligence for its understanding. Why it is necessary to burden the lay mind, neurotic or potentially neurotic, with information about the theory with which the physician may work is a puzzle. In dealing with other organ systems it is unnecessary for the patient to know the physiology and pathology before undergoing treatment. Certainly the methods of treatment of, let us say, bowel distress differ as widely in theory and practice as do the methods of treatment of the neuroses. Actually the preliminary theoretical knowledge, usually garbled by the popular writer and profoundly misunderstood by the lay reader, serves to make psychotherapy more difficult. Dr. Adamson's book is one of the best popular works explaining psychoanalysis for the purpose of general information of intelligent persons but it should by no means be put into the hands of a patient who plans to consult a psychiatrist.

The Endocrine Organs in Health and Disease, with an Historical Review. By Sir Humphry Davy Rolleston, G.C.V.O., K.C.B., M.D., Honorary Fellow of St. John's College, Cambridge. Cloth. Price, $13. Pp. 521, with 45 illustrations. New York & London: Oxford University Press, 1936.

The material included in this book is largely the result of a series of lectures on the history of the endocrine organs given by Rolleston before the Royal College of Physicians in London in 1933 and 1934. The Fitzpatrick lectures, as they are called, include four discussions but the supplemental material in the present book makes up a volume of fourteen chapters, including not only a history of endocrinology from the earliest times but also, through the historical approach, a fine summary of our present knowledge of this subject. Moreover, there are fine photographic plates of all the great contributors to this field and extensive citations from a vast bibliography indicating the scope of the author's reading. The biographic sketches throughout are well written and separated from the general text by a change in typography. This is a fundamental reference work in the field which it concerns and a valuable addition to any medical library. The index is so comprehensive and well organized that it deserves special mention.

Pratique médico-chirurgicale. Publiée sous la direction de A. Couvelaire, A. Lemierre, et Ch. Lenormant, professeurs à la Faculté de médecine de Paris. Secrétaire général, André Ravina. Tome IX: Supplément. Third edition. Half-cloth. Price, 165 francs. Pp. 960, with 276 illustrations. Paris: Masson & Cie, 1936.

This supplement to the eight volume series of Pratique médico-chirurgicale (1931) is intended to cover the advances of the last six years. This is done in most instances by short chapters but in some cases the entire article has been rewritten. The editors have exercised all possible care to avoid unproved theories or forms of practice merely because they are new and before their practical utility has become evaluated. Most prominent throughout the volume, the material of which is arranged alphabetically, are the chapters on advances in roentgenography of the various organs. Climatopathology and meteoropathology are treated rather comprehensively. There is so much in this "supplement" that is new and useful in the practice of medicine and surgery that the book may be recommended even to those French reading physicians as a review of medical progress, as the French see it, who do not possess the other volumes of this system of medical and surgical practice.

A Century of Medicine in San Antonio: The Story of Medicine in Bexar County, Texas. By Pat Ireland Nixon, M.D. Cloth. Price, $4. Pp. 405, with 32 illustrations. San Antonio, Texas: The Author, 1936.

This volume was developed by its author primarily because of his own interest in the community in which he has for so many years resided. Much of the material that is contained in the book has already been presented in various ways to the physicians of San Antonio. The profits from this volume, if any, are to accrue to the library of the county medical society.

The territory concerned is one of the most romantic in the United States. Its history is full of lively incidents and the author of this volume has made available a great deal of this material in connection with the medical history of Bexar County. It will be remembered that San Antonio is the home of the Alamo and the volume logically begins with the period before the Alamo and then traces history chronologically since that period. The material is supplemented by anecdotes and extracts from diaries and also by some excellent pictures, presumably from the author's private collections.

It relates the purchase of a home for the medical society and the progress of medical organization and concludes with a forecast for the future. As a contribution to American medical history, this book represents the best type of personal investigation.

The Principles of Bacteriology and Immunity. By W. W. C. Topley, M.A., M.D., M.Sc., Professor of Bacteriology and Immunology, University of London, and G. S. Wilson, M.D., F.R.C.P., D.P.H., Professor of Bacteriology as Applied to Hygiene, University of London, London School of Hygiene and Tropical Medicine Second edition. Cloth. Price, $12. Pp. 1,645, with 276 illustrations. Baltimore: William Wood & Company, 1936.

This work was first published in 1929 and reprinted in 1931, 1932 and 1934. The new edition has witnessed extensive advances in the field of bacteriology and immunity, which the authors have observed and duly incorporated in their text. They call attention to the fact that they deal with infective diseases of animals rather more fully than in most medical works. Originally published in two volumes, the material is now published in a single volume which is somewhat unwieldy, but apparently the majority of the critics of the first edition felt that a one volume work was more usable than a two volume work. The book is extensive, profound, well annotated and unquestionably a useful textbook in the field that it concerns.

Sammlung psychiatrischer und neurologischer Einzeldarstellungen. Herausgegeben von Prof. Dr. A. Bostroem und Prof. Dr. J. Lange. Band XI: Die defektschizophrenen Krankheitsbilder: Ihre Einteilung in zwei klinisch und erbbiologisch verschiedene Gruppen und in Unterformen vom Charakter der Systemkrankheiten. Von K. Leonhard, Oberarzt der Nervenklinik Frankfurt a. M. Paper. Price, 8.70 marks. Pp. 134. Leipzig: Georg Thieme, 1936.

The author discusses the classification of schizophrenic forms ending with defect. He brings numerous clinical descriptions to substantiate an elaborate classification of defects. His point of view is essentially "biologic" in that he, like most German psychiatrists today, attempts to separate genetically linked groups within clinical entities. The work is purely descriptive and classificatory. It bears the stamp of the Kleist concept of organic system defect in the psychoses and ignores the recent advances of psychologic studies of schizophrenia.

Greek Medicine. By Fred B. Lund, M.D. XVIII, Clio Medica: A Series of Primers on the History of Medicine. Edited by E. B. Krumbhaar, M.D. Cloth. Price, $2. Pp. 161, with 7 illustrations. New York: Paul B. Hoeber, Inc., 1936.

This interesting analysis of the medicine of ancient Greece is, of course, based on such evidence as is available in the writings of Hippocrates and Galen and others of the period, and on such works as those of Neuburger and Garrison on the history of medicine. The biographic sketch of Galen is of exceeding interest. The author has been especially attracted to the philosophy underlying the medical practices of the ancients. The book contains numerous well chosen quotations from earlier writings and a few interesting illustrations.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Acts: Administration of Anesthetics by Nurses.—Two practicing physicians, on behalf of themselves and all other physicians, filed a petition for an injunction to restrain the defendant nurse, employed by the defendant hospital, from administering general anesthetics in connection with operations. Such practice, it was contended, constituted a violation of the medical practice act of California. The trial court gave judgment for the defendants, and the plaintiffs appealed to the Supreme Court of California.

The findings, said the Supreme Court, show conclusively that everything that was done by the nurse in the present case, and by nurses generally, with respect to the administration of anesthetics, was and is done under the immediate direction and supervision of the operating surgeon and his assistants. Such method, said the court, seems to be the uniform practice in operating rooms. The court continued:

> There was much testimony as to the recognized practice of permitting nurses to administer anesthetics and hypodermics. One of the plaintiffs' witnesses testified to what seems to be the established and uniformly accepted practice and procedure followed by surgeons and nurses, and that is that it is not diagnosing nor prescribing by the nurses within the meaning of the Medical Practice Act. We are led further to accept this practice and procedure as established when we consider the evidence of the many surgeons who supported the contention of the defendant nurse, and whose qualifications to testify concerning the practice of medicine in this community and elsewhere were established beyond dispute. That such practice is in accord with the generally accepted rule is borne out by the decided cases.

Furthermore, said the court, aside from the proposition that nurses in the surgery during the preparation for and progress of an operation are not diagnosing or prescribing within the meaning of the medical practice act, it is the legally established rule that they are carrying out the orders of the physicians to whose authority they are subject. The surgeon has the power, and therefore the duty, to direct a nurse in her actions during the operation.

The judgment of the trial court for the defendants was therefore affirmed.—*Chalmers-Francis et al. v. Nelson et al. (Calif.), 57 P. (2d) 1312.*

Evidence: Credibility of Professional Expert Witness.—The plaintiffs, husband and wife, instituted suit against the defendant for damages, alleging that the defendant's agent, July 17, 1932, negligently caused a screen door to strike the wife violently on her abdomen and that this blow caused three miscarriages, one on Sept. 11, 1932, the second on Feb. 19, 1933, and a third on June 30, 1935. The trial court gave judgment for the plaintiffs, and the defendant appealed to the Supreme Court of Pennsylvania.

The wife's physician, testifying as her witness, stated that no one can tell with any degree of certainty what causes successive abortions such as the wife suffered. He was unable to specify the cause in this case. Another physician, who attended the wife at the hospital following her last abortion and who operated on her, was not called as a witness by the plaintiffs but was placed on the stand under subpena by the defendant. He stated that the wife's condition when he attended her was not caused by the injury three years previous thereto, and that in his opinion the abortion was brought on by an attack of "la grippe." In order to supply the deficiency in their proof as to the cause of the abortions, the plaintiffs called a "professional expert witness, who had been testifying in the courts of Allegheny county as an expert for thirty years." This witness had not attended the wife at any of the miscarriages and had not seen the hospital records. He testified, however, that in his opinion the successive abortions were due to the striking of the wife by the screen door. Concerning this witness, the Supreme Court of Pennsylvania quoted as follows from *Murphy v. Pennsylvania R. R. Co.*, 292 Pa. 213, 140 A. 867:

> The professional expert, whose testimony we relate above, frequently appeared in court as a witness in personal injury cases, and the inference from his evidence is that he made the giving of testimony in such actions a business. One of the evils in the trial of personal injury cases is padding the claim with evidence of the professional medical expert. When considering a motion for a new trial, based on an excessive verdict, ordinarily but little weight should be given to such testimony.

After examining the evidence in the case, the Supreme Court was convinced that the verdict was excessive and that a new trial should have been granted, not alone because of the excessiveness of the verdict but because of the unsatisfying state of the evidence.—*Nickolls v. Personal Finance Co. (Pa.), 185 A. 286.*

Malpractice: Alleged Negligent Care After Childbirth.—The defendant, an obstetrician, attended the patient during childbirth, Aug. 4, 1931. At the time of the delivery, the defendant made an incision in the plaintiff's perineum to prevent its rupture and sutured the incision after the delivery. The plaintiff claimed that shortly after she left the hospital she noticed a discharge of pus from the "sutured holes" and felt pain and that despite numerous telephone calls to the defendant he neglected to attend her until September 15, when, according to her contention, he told her that she was all right. Subsequently she went to another physician, who discovered a sinus in her perineum which developed into a fistula. Two operations were necessary before the plaintiff obtained relief. Suit was instituted against the defendant and a verdict for the plaintiff was set aside by the trial court. The plaintiff appealed to the Supreme Court of Errors, which upheld the action of the trial court. *Green* v. *Stone* (Conn.), 176 A. 123; abstr. THE JOURNAL, Oct. 12, 1935, page 1217. A second trial ensued, resulting in judgment for the defendant, and the plaintiff again appealed to the Supreme Court of Errors of Connecticut.

The defendant contended that the plaintiff made no complaint to him after leaving the hospital. He examined her, he claimed, on September 14 and found a "dimple" at the bottom of the incision in the perineum and on October 9 he discovered and treated a superficial sinus in the perineum. If there was a sinus present before October 9, the defendant contended, his failure earlier to discover and treat it was not the cause of the pain, suffering and expense resulting from the two operations.

The basis of the claim in this suit, said the court, was that due care on the part of the defendant required that he immediately investigate the complaints which the plaintiff claimed to have made to him shortly after her return from the hospital, and that if he had done so he would have discovered the small superficial sinus, which could then have been cured if treated promptly. There was no other allegation of negligent conduct on the part of the defendant. Whether the plaintiff made any such complaints was a sharply contested issue and the trial court did not err in charging the jury that if they believed that no such complaints were made, then their verdict should be for the defendant. An expert witness for the plaintiff testified at the first trial that no one could tell whether the recognized treatment of a sinus, if early applied, could have cleared up the plaintiff's condition. On the second trial, this witness changed his opinion and testified that the sinus could probably have been cured if treated promptly. The trial court in the second trial commented pointedly on this change of opinion. The plaintiff contended that these comments conveyed to the jury a lack of confidence on the part of the court in the testimony of this witness, and that this was unjustified and highly prejudicial to the plaintiff. That the witness

did express an opinion contrary to that he gave at the first trial was not questioned. Except for his testimony, the evidence went no further than to indicate that, while earlier treatment might have been beneficial, it was a matter of speculation as to whether the failure to give it was the cause of the plaintiff's subsequent condition. This was a vital question in the case and it was within the province of the court to point out its importance and specifically to call to the attention of the jury the change in the testimony of the witness as affecting the weight which they should give to his changed opinion.

The plaintiff complained because the trial court failed specifically to charge the jury that although a physician is ordinarily not responsible for an error of judgment he cannot adopt a course of treatment which would be a breach of his duty to use due care, and that even though he has used his best judgment he may still be found guilty of malpractice if he has failed to perform one of the duties which he owes to his patient. The trial court repeatedly charged the jury that it was the duty of the defendant to exercise due care and skill required of a specialist in the field of obstetrics, and the charge made it abundantly clear that he would be absolved from a bona fide error in judgment only in case he exercised such care and skill. After reviewing the whole case, the Supreme Court of Errors was of the opinion that no prejudicial error was evidenced by the record and the judgment of the trial court for the defendant was affirmed.—*Green v. Stone (Conn.), 185 A. 72.*

Optometry: Corporate Practice of Optometry Illegal in Ohio.—The Buhl Optical Company, a Delaware corporation, was granted authorization to engage in the manufacture and sale of optical goods and photographic supplies in Ohio. It operated stores in several cities of the state. Contending that the corporation was illegally engaged in the practice of optometry, the state on the relation of the attorney general instituted in the Supreme Court of Ohio an action in quo warranto against it.

Prior to April 1935 the corporation employed licensed optometrists to act as managers of its optical business and in connection therewith to practice optometry. For all of such services, whether as managers or as optometrists, they received a salary and commission paid by the corporation. Subsequent to the date named, the arrangement was changed by a written contract providing that, in consideration of the optometrist referring to the corporation patients desiring glasses on prescription and of the corporation referring to the optometrist all of its patrons desiring an examination of the eyes, the corporation leased to the optometrist certain office space in its place of business and permitted the optometrist to use certain equipment owned by the corporation for the examination of eyes. For examining eyes the optometrist agreed not to charge in excess of $1, no part of which was to go to the corporation. The optometrist further promised to sell to the corporation, after the termination of the contract, all of his prescription files for $1. Practically all patients who went to the optometrist were customers of the corporation and were attracted, to some extent, by advertisements inserted by the corporation in the daily newspapers. While customers might take the prescriptions given by the optometrist to any optician, spectacles were customarily obtained from the corporation, which sent the prescriptions to its home office at Pittsburgh, where the lenses were ground and mounted in frames.

A corporation, said the Supreme Court, may not directly or indirectly engage in the practice of optometry in Ohio. An incorporated optical company may lease an office or equipment to an optometrist and even carry his advertisements with its own. But while the optometrist is practicing his profession in such office and with such equipment, the corporation may not employ him in its optical business. If this course were permitted, the optometrist could bargain for and obtain such a high salary from his employer that he could afford to serve customers free of charge or for a nominal fee. In this way the amount of salary he could demand would be greatly augmented by attracting customers to the optical business through inexpensive optometric services. The optometrist would become a mere adjunct of the optical business, and the corporation in effect would be practicing optometry. The practice of the optometrist must be wholly separate from and independent of the business of the optical company. Where the optometrist leases quarters or equipment, or both, from the optical company, the latter may receive prescriptions for eyeglasses from such optometrist the same as from any other. The optical company, however, may not lawfully exercise any control over the optometrist nor may it fill prescriptions issued by an optometrist legitimately employed by it. It may not advertise in such a way as to lead the public to believe that it does the work of the optometrist or do anything through an employee that amounts to the practice of optometry, even though such employee is an optometrist. The corporation may not enter into a contract with the optometrist by which the optometric work of the latter is regulated or controlled, in the prices to be charged, the customers to be served, or the manner of doing the work. Neither may the corporation retain nor acquire control over or ownership of or interest in any records, copies of prescriptions, or prescriptions of the optometrist.

A judgment was therefore entered against the corporation, ousting it from engaging directly or indirectly in the practice of optometry in Ohio.—*State ex rel, Bricker, Atty. Gen., v. Buhl Optical Co. (Ohio), 2 N. E. (2d) 601.*

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Birmingham, April 20-22. Dr. D. L. Cannon, 519 Dexter Ave., Montgomery, Secretary.

American Association for the Study of Neoplastic Diseases, Philadelphia, April 9-10. Dr. E. R. Whitmore, 2139 Wyoming Ave. N.W., Washington, D. C., Secretary.

American Association of Anatomists, Toronto, Ont., March 25-27. Dr. George W. Corner, 260 Crittenden Blvd., Rochester, N. Y., Secretary.

American Association of Pathologists and Bacteriologists, Chicago, March 25-26. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.

American Association on Mental Deficiency, Atlantic City, N. J., May 5-8. Dr. E. Arthur Whitney, Elwyn, Pa., Secretary.

American College of Physicians, St. Louis, April 19-23. Mr. E. R. Loveland, 4200 Pine St., Philadelphia, Executive Secretary.

American Pediatric Society, University, Va., April 29-May 1. Dr. Hugh McCulloch, 325 North Euclid Ave., St. Louis, Secretary.

American Physiological Society, Memphis, Tenn., April 21-24. Dr. A. C. Ivy, 303 East Chicago Ave., Chicago, Secretary.

American Society for Clinical Investigation, Atlantic City, N. J., May 3. Dr. J. M. Hayman Jr., 2065 Adelbert Road, Cleveland, Secretary.

American Society for Experimental Pathology, Memphis, Tenn., April 21-24. Dr. Shields Warren, 195 Pilgrim Road, Boston, Secretary.

American Society for Pharmacology and Experimental Therapeutics, Memphis, Tenn., April 21-24. Dr. E. M. K. Geiling, 947 East 58th St., Chicago, Secretary.

American Society of Biological Chemistry, Memphis, Tenn., April 21-24. Dr. H. A. Mattill, Chemistry Building, State University of Iowa, Iowa City, Secretary.

Arizona State Medical Association, Yuma, April 1-3. Dr. D. F. Harbridge, 15 East Monroe St., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 12-14. Dr. W. R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

Association of American Physicians, Atlantic City, N. J., May 4-5. Dr. Hugh J. Morgan, Vanderbilt University Hospital, Nashville, Tenn., Secretary.

California Medical Association, Del Monte, May 2-5. Dr. F. C. Warnshuis, 450 Sutter St., San Francisco, Secretary.

District of Columbia, Medical Society of the, Washington, May 5-6. Dr. C. B. Conklin, 1718 M St. N.W., Washington, Secretary.

Federation of American Societies for Experimental Biology, Memphis, Tenn., April 21-24. Dr. Shields Warren, 195 Pilgrim Road, Boston, Secretary.

Florida Medical Association, St. Petersburg, April 5-7. Dr. Shaler Richardson, 111 West Adams St., Jacksonville, Secretary.

Hawaii Territorial Medical Association, Hilo, April 30-May 2. Dr. Douglas B. Bell, Queen's Hospital, Honolulu, Secretary.

Kansas Medical Society, Topeka, May 3-6. Mr. Clarence G. Munns, Stormont Bldg., Topeka, Executive Secretary.

Louisiana State Medical Society, Monroe, April 26-28. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 27-28. Dr. Walter Dent Wise, 1211 Cathedral St., Baltimore, Secretary.

Minnesota State Medical Association, St. Paul, May 3-5. Dr. E. A. Meyerding, 11 West Summit Ave., St. Paul, Secretary.

New Jersey, Medical Society of, Atlantic City, April 27-29. Dr. J. B. Morrison, 66 Milford Ave., Newark, Secretary.

North Carolina, Medical Society of the State of, Winston-Salem, May 3-5. Dr. L. B. McBrayer, Southern Pines, Secretary.

Ohio State Medical Association, Dayton, April 28-29. Mr. C. S. Nelson, 79 East State St., Columbus, Executive Secretary.

South Carolina Medical Association, Columbia, April 13-15. Dr. E. A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Knoxville, April 13-15. Dr. H. H. Shoulders, 706 Church St., Nashville, Secretary.

Western Branch of American Public Health Association, Phoenix, Ariz., April 13-15. Dr. William P. Shepard, 600 Stockton St., San Francisco, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers in continental United States and Canada for a period of three days. Periodicals are available from 1926 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

13: 1-128 (Jan.) 1937

Digital Arterioles of Normal and Hypertensive Individuals: Their Response to Intravenous Administration of Epinephrine, as Measured by Cutaneous Temperature. T. J. Fatherree and G. E. Brown, Rochester, Minn.—p. 1.

Incidence and Significance of Blood Vessels in Normal and Abnormal Heart Valves. J. T. Wearn and A. R. Moritz, with collaboration of A. S. Dowling, Grace E. Haskin, C. L. Hudson and E. S. Orgain, Cleveland.—p. 7.

Concerning a New Concept of Genesis of Electrocardiogram. L. N. Katz, in collaboration with A. Bohning, I. Gutman, K. Jochim, H. Korey, F. Ocko and M. Robinow, Chicago.—p. 17.

Heart Disease in Children: Rheumatic Group: I. Certain Aspects of Age at Onset and of Recurrences in 488 Cases of Juvenile Rheumatism Ushered in by Major Clinical Manifestations. I. R. Roth, Claire Lingg and Alice Whittemore, New York.—p. 36.

Atrioventricular Rhythm With and Without Retrograde Block. A. Schott, London, England.—p. 61.

*Electrocardiogram During and After Emergence from Diabetic Coma. S. Bellet and W. W. Dyer, Philadelphia.—p. 72.

Cardiac Syncope: Concerning Clinical Differentiation of Its Types. J. F. Borg and C. E. Johnson, St. Paul.—p. 88.

Arteriovenous Aneurysm: Report of Case with Pronounced Electrocardiographic Changes. J. T. Quattlebaum, Columbia, S. C.—p. 95.

The Electrocardiogram During Diabetic Coma.—Certain observations suggested to Bellet and Dyer that rather marked and, on the whole, consistent alterations of the T waves and lengthening of the QT interval were present during certain stages of diabetic coma after the acidosis had been partially or completely controlled. This led to the observation of seventeen cases of diabetic coma and six cases of "precoma." Electrocardiographic changes were observed in every one of the cases studied by serial electrocardiograms during and on emergence from diabetic coma. The electrocardiographic changes of the coma cases were graded as severe in eight, moderate in six and slight in three; the electrocardiographic changes in the six precoma cases were similar, although less severe than were the changes of those patients who entered the hospital in coma. Only one showed severe electrocardiographic changes; four showed moderate and one slight changes. The chief alterations observed were lengthening of the QT interval, depression of the ST interval and inverted T waves. Alterations in the QRS complexes were infrequent. In all except three cases of the entire series of diabetic acidosis the electrocardiogram eventually returned to normal. The most abnormal electrocardiographic changes were observed not during coma but about twenty-four hours later when the patient was clinically improved and out of the acidotic state. Serial electrocardiographic studies may be an important method of gaging the severity of cardiac disturbance during and on emergence from diabetic coma.

American Journal of Ophthalmology, St. Louis

20: 1-118 (Jan.) 1937

Lectures on Cataract. R. E. Wright, Madras, India.—p. 1.

Choroidal Tears. A. Hagedoorn, Amsterdam, Netherlands.—p. 13.

Importance of Aniseikonia. E. Jackson, Denver.—p. 16.

New Visual Acuity and Astigmatism Test Chart. C. E. Ferree and G. Rand, Baltimore.—p. 21.

Comparison of Suprarenin Bitartrate and Cocaine Plus Euphthalmine as Mydriatics for Elderly Patients. L. T. Post, St. Louis.—p. 33.

Dust Factor in the Production of Pterygium. T. J. Dimitry, New Orleans.—p. 40.

Prevention of Ocular Complications in Tryparsamide Therapy. M. Fine and H. Barkan, San Francisco.—p. 45.

Retrobulbar Injections of Atropine in Arteriosclerotic Atrophy: Report of Case. F. C. Cordes, San Francisco.—p. 53.

Retinal Angiospasm in Toxemia of Pregnancy and Hypertension. E. Selinger, Chicago.—p. 56.

Archives of Ophthalmology, Chicago

17: 1-206 (Jan.) 1937

Clinical Problem of Allergy in Relation to Conjunctivitis and Iritis. A. C. Woods, Baltimore.—p. 1.

Trachomatous Keratitis: Biomicroscopic Study of 280 Indian School Children. P. Thygeson, New York.—p. 18.

Physics of Diathermic Coagulation in the Eye: Experimental Studies and Some Practical Notes on Operation. M. Klein, Budapest, Hungary.—p. 27.

Ocular Signs of Thrombosis of Intracranial Venous Sinuses. F. B. Walsh, Baltimore.—p. 46.

Second Group of Cases of Arachnodactyly. R. I. Lloyd, Brooklyn.—p. 66.

Examination and Care of Eye in Relation to Lighting. C. E. Ferree and G. Rand, Baltimore.—p. 78.

Growth in Mass and Volume of Human Lens in Postnatal Life. R. E. Scammon and M. B. Hesdorffer, Minneapolis.—p. 104.

Opsonic Index for Uveal Pigment in Treated Patients. H. C. Henton, Baltimore.—p. 113.

Is Trachoma a Rickettsial Disease? A. Busacca, São Paulo, Brazil; translated by P. Thygeson, New York.—p. 117.

Metastatic Pneumococcic Uveoscleritis Following Pneumonia. J. H. Hulka, Long Island City, N. Y.—p. 127.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

18: 1-64 (Jan.) 1937

*Conservative Method of Treatment of Trigeminal Neuralgia: Preliminary Report. B. Ulanski, Philadelphia.—p. 7.

Lumbosacral Derangement and Its Manipulative Treatment. B. S. Troedsson, Bryn Mawr, Pa.—p. 10.

Low Back Pain. W. I. Galland, New York.—p. 16.

Fever Therapy. W. Bierman, New York.—p. 28.

New Aid in Diagnosing Focal Infections of Dental Origin. J. L. Sherman, Huntington, N. Y.—p. 34.

Conservative Treatment of Trigeminal Neuralgia.—For the past ten years Ulanski has been using a certain form of electricity for the relief of pain in various nerve disorders. This form of electricity is a modification of the so-called rapid sinusoidal current. The rapid sinusoidal current is an alternating current, a voltage tracing of which would show as many positive and negative sines as there are cycles per second. Each positive phase is immediately succeeded by a negative phase of equal intensity; therefore the rapid sinusoidal current displays no polarity effects. This type of current possesses decided pain-relieving qualities. Favorable results obtained with it in sciatica and other forms of neuritis and neuralgia have suggested its application also for trigeminal neuralgia of both the major and minor forms. The author has treated cases in their incipience as well as those which have been previously treated by other methods. Of sixty-five cases treated there have been only nine failures. The period of relief varied from a few months to three or more years, with immediate response to repetition of treatment on the return of pain.

California and Western Medicine, San Francisco

46: 1-72 (Jan.) 1937

Dengue-like Fever: Clinical Manifestations Recently Observed in the San Francisco Bay District. G. Cheney, San Francisco.—p. 8.

Basal Metabolism: Determination of Zero Point in Normal Group in Southern California. J. M. Askey, Los Angeles.—p. 11.

Mobile Right Colon: Clinical Consequences. L. Brooks, San Francisco.—p. 14.

Congenital Occlusion of Small Intestine. J. H. Woolsey, Woodland.—p. 20.

Sinus Diseases: Use of Roentgen Ray in Their Diagnoses. O. E. Ghrist, Glendale.—p. 24.

*Reconstruction of the Breast. H. L. Updegraff, Hollywood.—p. 28.

The Feet in Young Childhood: Some Facts and Fallacies. E. F. Patton, Los Angeles.—p. 31.

Peripheral Arteries: Their Importance in Industrial Practice. F. Pearl, San Francisco.—p. 35.

Reconstruction of the Breast.—Updegraff believes that surgery of the breast should always be undertaken for a very definite reason, either physical or mental, or the end results will not be acceptable to the patient. From the surgeon's standpoint there are three types of nonmalignant breast in considering reconstruction: 1. The moderately enlarged breast free from lumps that a simple mastopexy, without a lower keyhole incision in the skin flap or excision of the gland tissue, will rebuild. 2. The definitely enlarged breast needing a mastopexy, utilizing the keyhole incision and removing varying amounts of breast fat and tissue including an occasional lump. 3. The third type is the large nodular hypertrophic breast: for example, the painful lump in the breast occurring each period; also the polycystic fibromas and the breast of chronic

cystic mastitis. Added to these are various conditions of the breast, so that when the patient asks of the doctor: Do you think I should have my breast removed to avoid possible danger in the future? the doctor is forced to answer in the affirmative. A well planned amputation, carefully performed with a preliminary full thickness nipple graft, will allow removal of all lumps and the salvaging of sufficient skin and fat to form an acceptable, normal looking breast. If an acceptable, nonfunctional cosmetic breast can be offered to patients who are procrastinating against breast surgery through fear of deformity until too late, another helping hand will be contributed in the fight on cancer.

Canadian Public Health Journal, Toronto

27: 581-622 (Dec.) 1936

Rôle of the Physician in Urban Sanitation. L. A. Pequegnat, Toronto.—p. 581.
Adult Immune Serum in Measles Control. C. F. Blackler, Hamilton, Bermuda, West Indies.—p. 587.
Some Aspects of Health Administration in Northern Ontario. H. McIntyre, Toronto.—p. 592.
Duration of Schick Immunity. D. T. Fraser and K. F. Brandon, Toronto.—p. 597.
Enteric Disease Problem in Ontario. R. P. Hardman, Toronto.—p. 600.
Bacillary Dysentery in British Columbia. R. J. Gibbons, Vancouver, B. C.—p. 606.

Florida Medical Association Journal, Jacksonville

23: 307-354 (Jan.) 1937

Management of Peptic Ulcer. P. B. Welch, Miami.—p. 319.
Some "High-Lights" in Tuberculosis. A. J. Logie, Chattahoochee.—p. 323.
*Dermatitis Venenata. J. L. Kirby-Smith, Jacksonville.—p. 326.
Remarks on Urography and Cystoscopy. J. C. Davis, Quincy.—p. 328.
Correction of Some Problems in State Medicine. H. A. Walker, Miami Beach.—p. 330.

Dermatitis Venenata.—Kirby-Smith divides his discussion of dermatitis venenata into forms due to chemicals, cosmetics and plants. He has found that in Florida ivy poison is of minor consideration but that there are some sixty-odd shrubs, plants and flowers producing skin irritations. Any oily or greasy preparation should not be used on acute dermatitis of plant origin. If available, an air-cooled ultraviolet ray treatment (full erythema dose) will bring about a prompt evolution. Alcoholic preparations with salicylic acid or aluminum acetate are recommended or continued very hot or very cold wet dressings of some mild antiseptic or astringent character, boric acid solution, black wash or saturated solution of sodium thiosulfate. After the termination of the inflammation, some simple emollient should be used for comfort.

Journal of Bone and Joint Surgery, Boston

19: 1-278 (Jan.) 1937. Partial Index

Tibia Vara: Osteochondrosis Deformans Tibiae. W. P. Blount, Milwaukee.—p. 1.
New Operation for Hallux Valgus and Hallux Rigidus. G. R. Girdlestone, Oxford, England, and H. J. Spooner, Regina, Sask., Canada.—p. 30.
*Use of Bone Chips in Treatment of Localized Osteitis Fibrosa. E. Freund, Venice, Fla.—p. 36.
Skeletal and Extraskeletal Tuberculous Lesions Associated with Joint Tuberculosis. G. A. Duncan, Norfolk, Va.—p. 64.
Köhler's Disease of Tarsal Scaphoid: End-Result Study. M. G. Karp, Boston.—p. 84.
Auscultation of Joints. A. Steindler, Iowa City.—p. 121.
Tendinoplasty of Flexor Tendons of the Hand: Use of Tunica Vaginalis in Reconstructing Tendon Sheaths. C. L. Wilmoth, Denver.—p. 152.
Arthrotomy for Internal Derangement of Knee. P. P. Swett, Hartford, Conn.—p. 157.
Fractures and Dislocations of Cervical Spine: Part I. Fractures. S. M. Roberts, Boston.—p. 199.
Myositis Ossificans Traumatica. R. F. Bowers, New York.—p. 215.
Ununited Fractures Treated by Bone Drilling. E. R. Easton and P. V. Prewitt, New York.—p. 230.
*Method of Treating Fracture of Clavicle. G. W. Hawley, Bridgeport, Conn.—p. 232.
Care of Feet After Bunionectomy. L. J. Miltner, Peiping, China.—p. 235.
Selection of Knots for Use with Traction-Suspension Apparatus. W. D. Davidson, Evansville, Ind.—p. 237.

Bone Chips in Treatment of Osteitis Fibrosa.—Freund treated seven cases of localized osteitis fibrosa by packing the curetted cavity with chips of bone obtained from the affected limb or, when necessary, from both tibias. The use of bone chips was found to be superior to simple scraping and the use of caustic substances. The cavity can be filled much more easily with chips than with solid cortical bone grafts, and it seems also that the power of osteogenesis is greater with the use of chips. Giant-cell tumors are not so susceptible to this form of treatment, especially if they are in the more advanced stage and if too great a defect results after the curettage of the tumor tissue. Nevertheless, the author obtained a very good result in one case in which the entire lateral condyle was involved. Care should be taken to fill the defect with the chips as completely as possible. In too advanced cases or in recurrent cases of giant-cell tumor, resection with heavy, bridging, tibial grafts is preferable to the less radical procedures, such as curettage and the use of bone chips, and to the more radical ones, such as amputation and exarticulation.

Method of Treating Fracture of Clavicle.—For the last ten years, Hawley has used the following method for fractures of the clavicle: The patient, either standing or sitting on a stool, is requested to hold his head erect and to square his shoulders like a West Point cadet. The end of a strip of adhesive plaster is fastened to the skin in front of the head of the humerus. The opposite arm in abduction is pulled into hyperextension and used as a lever, while the adhesive plaster under strong tension is anchored to the opposite wall of the chest. This acts to pull the shoulder girdle back and to hold it securely. Several strips of plaster are applied in like manner, a double thickness of plaster being used for added strength. Then a cap of adhesive plaster is applied over the shoulder to anchor the anterior ends of the first plaster and to protect the site of fracture. For the first week the arm is carried in a sling, following which the patient is allowed to take the arm out of the sling for meals. The sling is discarded when healing is under way and confidence returns. The plaster is reapplied every week for three or four weeks, the same tension being used to hold the reduction.

Journal Industrial Hygiene & Toxicology, Baltimore

19: 1-72 (Jan.) 1937

Blood Pressure in Lead Poisoning: Note. L. Teleky, Vienna, Austria.—p. 1.
Atmospheric Lead Contamination from High Temperature Lead Baths. B. D. Tebbens, Boston.—p. 6.
Abnormal Air Conditions in Industry: Their Effects on Workers and Methods of Control. C. P. Yaglou, Boston.—p. 12.
Petrographic Method of Dust Analysis. C. R. Williams, Boston.—p. 44.
Dust Filtering Efficiency of Human Nose. F. J. Tourangeau and P. Drinker, Boston.—p. 53.
Dust Hazards and Their Control in Ceramic Industry. T. C. Angus and D. Stewart, London, England.—p. 58.

Journal of Nutrition, Philadelphia

13: 1-122 (Jan. 10) 1937

Effect of Enteric-Coated Pancreatine on Fat and Protein Digestion of Depancreatized Dogs. W. A. Selle, with technical assistance of I. W. Moody, Galveston, Texas.—p. 15.
Effectiveness of Orally Administered Diastase in Achylia Pancreatica (Dog). J. M. Beazell, C. R. Schmidt and A. C. Ivy, Chicago.—p. 29.
*Bilateral Symmetry of Skin Temperature. H. Freeman, F. E. Linder and R. F. Nickerson, Worcester, Mass.—p. 39.
Improved Technic for Metabolism Studies in Preschool Children with Statistical Determination of Its Reliability. Jean E. Hawks, Marie Dye and Merle M. Bray, East Lansing, Mich.—p. 51.
Iron Metabolism of Normal Young Women During Consecutive Menstrual Cycles. Ruth M. Leverton and Lydia J. Roberts, Chicago.—p. 65.
Utilization of Energy Producing Nutriment and Protein as Affected by Sodium Deficiency. O. J. Kahlenberg, A. Black and E. B. Forbes, State College, Pa.—p. 97.
Utilization of Hexoses by Excised Rat Tissues. M. Elizabeth Marsh, Rochester, N. Y.—p. 109.

Bilateral Symmetry of Skin Temperature.—As a part of a biologic analysis of adaptative functions in schizophrenia, Freeman and his colleagues studied the differences in skin temperature between the right and left sides in nine symmetrically located areas on the body surface of twenty normal and twenty schizophrenic individuals. Seven readings were made on each point at intervals of thirty minutes with the environmental temperature held at 75.2 F. and the relative humidity at 20 per cent. 1. In both normal and psychotic individuals the trunk on the left and the extremities on the right have the higher skin temperatures. 2. Individuals differ significantly from one another relative to the magnitude of the differences between the temperatures of symmetrically located areas. In this respect patients with schizophrenia differ from one another

more than do normal individuals. 3. From period to period the consistency of the magnitudes of the differences between the temperatures of the two sides is high, despite the fact that the levels of temperature may be varying. 4. The variation of the magnitude of the differences between the two sides within the individual for any particular period is small. In this respect also the schizophrenic patient shows less consistency between the temperatures of symmetrically located areas than does the normal subject. 5. The degree of bilateral symmetry of skin temperatures warrants the limitation of the analysis of such data to one side of the body.

Journal of Pharmacology & Exper. Therap., Baltimore

59: 1-122 (Jan.) 1937

Anesthesia and Liver Damage: I. Protective Action of Oxygen Against Necrotizing Effect of Certain Anesthetics on Liver. S. Goldschmidt, I. S. Ravdin and B. Lucké, Philadelphia.—p. 1.

Experiments on Latency of Strophanthidin Emesis in Cats. M. Dresbach and A. P. Schafer, Albany, N. Y.—p. 15.

Effect of Regular Injections of Acetylcholine on Choline-Esterase Activity of Serum. G. E. Hall and G. H. Ettinger, Toronto.—p. 29.

*Choline-Esterase Activity of Normal and Pathologic Human Serums. G. E. Hall and C. C. Lucas, Toronto.—p. 34.

Pharmacodynamic Reactions of Intracisternal Sodium Isoamylethylbarbiturate (Sodium Amytal), Pyridine-Beta-Carbonic Acid Diethylamide (Coramine), Pentamethylenetetrazol (Metrazol), and Picrotoxin During Morphine-Sodium Iso-Amylethylbarbiturate Anesthesia. J. C. Rice and R. M. Isenberger, Kansas City, Mo.—p. 43.

Estrogenic Activities of Some Synthetic Phenanthrene Compounds and Some Oxidation Products of Theelol. S. A. Thayer, D. W. MacCorquodale and E. A. Doisy, St. Louis.—p. 48.

Study of Cobalt Color Reaction for Detection of Barbiturates. F. L. Kozelka and H. J. Tatum, Madison, Wis.—p. 54.

Quantitative Study of Barbiturates in Cerebrospinal Fluid. F. L. Kozelka and H. J. Tatum, Madison, Wis.—p. 63.

Influence of Age and Sex on Repeated Administration of Sodium Pentobarbital to Albino Rats. W. M. Moir, Charlottesville, Va.—p. 68.

Effects of Methylaminomethyl Heptene (Octin) on Animal Uterus. J. B. Mitchell Jr., Memphis, Tenn.—p. 86.

Effects of Temperature on Toxicity of Procaine for White Mice. R. F. Sievers and A. R. McIntyre, Omaha.—p. 90.

Studies on Physiologic Effect of Diethylene Glycol: II. Toxicity and and Fate. H. B. Haag and A. M. Ambrose, Richmond, Va.—p. 93.

Toxic Potentialities of Continued Administration of Chlorate for Blood and Tissues. A. P. Richardson, San Francisco.—p. 101.

Dihydroxyphenyl Ethanolamine (Arterenol) as Possible Sympathetic Hormone. R. L. Stehle and H. C. Ellsworth, Montreal.—p. 114.

Choline-Esterase Activity of Serums.—Hall and Lucas describe a micromodification of the continuous titration method for the determination of the rate of hydrolysis of acetylcholine by blood serum. The choline-esterase activity is defined in terms of initial velocity of the hydrolysis. The unit chosen is the amount of enzyme necessary to liberate 1 cc. of hundredth normal acetic acid in ten minutes at p_H 8 and 37.5 C. The choline-esterase activity of a large number of normal and pathologic human serums has been determined. The variation within the species is from 0.9 to 3.9 units per cubic centimeter, the mode being in the interval 2.4 to 2.6. Roughly, three fourths of the bloods examined had serum activities between 1.8 and 3.2. No correlation between the choline-esterase activity of the serum and age, sex, activity, diet, heart rate or blood pressure could be found in either the normal or the pathologic group. None of the clinical conditions studied produced any characteristic change in the activity of this serum enzyme.

Laryngoscope, St. Louis

46: 899-968 (Dec.) 1936

Diverticula of Esophagus: Review of Literature with Notes on Four Cases of Pulsion Diverticulum Operated by One Stage Technic (Modified Gaub-Jackson). J. A. Perrone, Pittsburgh.—p. 899.

Dry Ice (Carbon Dioxide Ice) Burn of Throat. P. S. Stout, Philadelphia.—p. 922.

Passive Masking as an Aid in Use of Audiometer. C. Firestone, Seattle.—p. 924.

*Toxic Labyrinthitis of Nasopharyngeal Origin. T. P. O'Connor, Chicago.—p. 926.

New Instruments: I. Epistaxis Clamp: II. Double Tonsil Hemostat. H. D. Newkirk, Anaheim, Calif.—p. 931.

Lingual Thyroid. L. T. Buckman, Wilkes-Barre, Pa.—p. 935.

Toxic Labyrinthitis of Nasopharyngeal Origin.—O'Connor proposes to establish the intoxication caused by nasopharyngitis as an etiologic factor in toxic labyrinthitis. Twenty-three cases have been studied which displayed the typical symptoms of true labyrinthine disturbance. In none of these patients could local lesions of the labyrinth, brain, middle ear or mastoid be demonstrated; syphilis and poisoning were conclusively ruled out. A search for a focus of infection in every case revealed, in the absence of all other significant physical changes, active subacute or chronic nasopharyngitis. The inflammatory nature of the condition was confirmed by cultures of the nasopharynx in all cases, most of which produced a heavy growth of Streptococcus viridans. Treatment of the nasopharyngeal vault was followed by prompt relief of symptoms. The reason for this quick response is that absorption of toxin is immediately inhibited by treatment. In an infected nasopharynx the membrane is usually found to be covered by a thin layer of mucus with a consistency similar to that of mucilage. Removal of this sheet of mucus and contraction of the lymph follicles doubtless retard the absorption of toxin long before the infecting organisms are killed. Several treatments are usually necessary before the area is entirely cleared of inflammation.

Medical Annals of District of Columbia, Washington

6: 1-28 (Jan.) 1937

Development of Thought on Etiology of Pernicious Anemia. T. G. Klumpp, New Haven, Conn.—p. 1.

Perforated Gastric and Duodenal Ulcers. H. C. Hull, Baltimore.—p. 6.

Alcohol Injection of Lumbar Sympathetic Ganglions in Arteriosclerosis of Extremities. W. Y. Baker, Washington.—p. 9.

Gonococcemia with Endocarditis and Recovery: Report of Case. J. K. Cromer, Washington.—p. 15.

Minnesota Medicine, St. Paul

20: 1-70 (Jan.) 1937

Pneumonia in Minnesota: What Can Be Done About It? Lucy S. Heathman, Orianna McDaniel and A. J. Chesley, Minneapolis.—p. 1.

Incidence of Pneumococcus Types in Minnesota. J. A. Layne and H. A. Reimann, Minneapolis.—p. 3.

The New Insulin. R. M. Wilder, Rochester.—p. 6.

Chordoma with Hitherto Unobserved Intraspinal Extension: Case. A. Schwyzer, St. Paul.—p. 15.

Diverticulitis of Colon. R. E. Weible, Fargo, N. D.—p. 21.

Benzedrine in Treatment of Narcolepsy. M. J. Shapiro, Minneapolis.—p. 28.

Branchial Cysts. C. G. Ochsner, Wabasha.—p. 31.

Missouri State Medical Assn. Journal, St. Louis

34: 33-72 (Feb.) 1937

Importance of Bladder Function in Dealing with Infection. D. K. Rose, St. Louis.—p. 33.

Lesions of Superior Mediastinum. I. H. Lockwood, F. C. Narr and C. E. Bell, Kansas City.—p. 37.

Review of Some of the Incisions Used for Appendectomy with Description of an Additional One. E. V. Mastin, St. Louis.—p. 41.

Ileocecal Segment. J. W. Larimore, St. Louis.—p. 48.

*Intrathyroid Therapy for Hyperthyroidism: Preliminary Report. F. M. Postlethwaite, Kansas City.—p. 53.

Congenital Malaria. W. D. English, Cardwell.—p. 56.

Intrathyroid Therapy for Hyperthyroidism.—It occurred to Postlethwaite that, if he could produce fibrous tissue in the thyroid in hyperthyroidism, beneficial results would follow. The sclerosing solution produces the minimal amount of exudative reaction after its injection, is practically painless when injected, stimulates the growth of fibrous tissue, is nontoxic and produces no systemic reaction. Since one is dealing with an endocrine gland, each patient must have a complete examination from an endocrine standpoint. The most satisfactory results have been obtained in the cases in which the course of injections into the thyroid was followed by a course of supportive endocrine therapy. The interrelationship of the thyroid, the ovaries and the pituitary during a period of ovarian insufficiency or of pituitary hypertrophy is nothing more than an attempt to meet the demand of supply by inhibition or stimulation. If by producing fibrosis in the thyroid its activity is reduced and its output lessened, it is only reasonable to assume that the system must be aided by supportive endocrine therapy to bring about a proper endocrine balance with the glands that are cooperative with the thyroid: the pituitary and the gonads. Strict asepsis must be employed. The cricoid cartilage is located; from 0.5 to 1 cm. below the cricoid is normally found the isthmus of the thyroid, then at a point from 1.5 to 2 cm. laterally, with the needle (26 gage, five-eighths inch long) directed posteriorly, the body of the gland can be injected. After puncturing the skin, the needle is pushed downward to the platysma, which usually offers slight resistance. The needle is inserted its full length through the capsule of the thyroid

into the gland. Small amounts of solution are deposited at three or four points, radially or fanwise. After two or three treatments to the body of the gland, the upper and lower portions of the gland are treated in an attempt to produce fibrosis in the region of the blood supply to the gland. Each time the point of the needle is changed, retraction on the plunger of the syringe is made in order to determine whether or not the point is in a blood vessel. Owing to the variability in the size and lobular thickness of the thyroid, extreme care must be used in making deep injections to prevent the formation of fibrosis on the posterior surface of the thyroid, which might involve the parathyroids and cause serious or troublesome complications. The author reports five typical cases from his series, and states that the solutions used will be reported in a subsequent article.

New England Journal of Medicine, Boston

216: 43-88 (Jan. 14) 1937

Night Blindness Due to Vitamin A Deficiency: Consideration of Its Importance in Traffic Problems. H. Jeghers, Boston.—p. 51.

216: 89-140 (Jan. 21) 1937

Experimental Neurology in the Harvard Medical School: Chairman's Address. W. B. Cannon, Boston.—p. 89.
Recent Developments in Surgery of Sympathetic Nervous System. J. C. White, Boston.—p. 91.
Myasthenia Gravis. J. B. Ayer, Boston.—p. 95.
Experience with Oral Prostigmin Therapy in Myasthenia Gravis. R. S. Mitchell, Glens Falls, N. Y.—p. 96.
Cerebral Circulation. S. Cobb and H. S. Forbes, Boston.—p. 99.
Consideration of "Rhythm" as Measure for Birth Control. T. R. Goethals, Boston.—p. 104.
Control of Abortion. F. J. Taussig, St. Louis.—p. 109.

216: 141-192 (Jan. 28) 1937

*Value of Sympathectomy in Treatment of Vascular Disease. R. H. Smithwick, Boston.—p. 141.
Border Lines of Knowledge in Present Day Psychiatry. G. Zilboorg, New York.—p. 151.
*Dermatomyositis: Study of Three Cases. J. C. Turner, Boston.—p. 158.
Dangerous Dusts. J. B. Hawes 2d, Boston.—p. 162.
Precise Evaluation of Ultraviolet Therapy in Experimental Rickets. J. W. M. Bunker and R. S. Harris, Cambridge, Mass.—p. 165.

Sympathectomy in Treatment of Vascular Disease.—Smithwick discusses the results of sympathectomy in Raynaud's disease, thrombo-angiitis obliterans, angina pectoris and essential hypertension. The clinical results of sympathectomy vary a great deal, depending on which portion of the pathway is divided, and are far better if the preganglionic portion is interrupted. When a blood vessel is totally disconnected from the central nervous system, residual vascular spasm will appear after a short period (weeks) in response to cold, pain and emotion. The amount of residual spasm is more than twice as great when sympathectomy is accomplished by postganglionic section rather than by preganglionic section. Residual vascular spasm can be largely eliminated by denervation of the adrenals in animals and, presumably, also in man. The best and most lasting results of sympathectomy for vascular disease will be obtained by preganglionic section, with denervation of the adrenals if necessary. The operative results in Raynaud's disease are most striking early in the disease; that is, before marked local changes have taken place. The best results are obtained in the early and moderately advanced cases, the hands being constantly warm, dry and pink. Even in the advanced group the abolition of color change and the dryness produced make the result worth while, even though there may be only a slight elevation of surface temperature. In contrast to Raynaud's disease, thrombo-angiitis obliterans is primarily an obliterative vascular disease. In the early stages perhaps one case in ten will show a striking rise in surface temperature of the tips of the digits (from 10 to 20 degrees F.), when the sympathetic nerve supply is interrupted by peripheral nerve block, by paravertebral lumbar sympathetic block or by spinal anesthesia. Under such circumstances, lumbar sympathectomy is indicated and has been well worth while. It is rarely necessary to perform a dorsal sympathectomy in this disease. Peripheral nerve block, induced by crushing or by alcohol injection, which not only produces temporary anesthesia but also temporarily sympathectomizes the anesthetic area, has a wider field of application in the treatment of this disease. It should frequently be followed by lumbar sympathectomy after the nerves regenerate. In the treatment of angina pectoris, as there are no white rami above the first thoracic ganglion, any pain pathways descending the cervical sympathetic trunk, as well as those carried by the direct thoracic cardiac nerves, can be interrupted in the upper dorsal levels, while cervical sympathectomy will fail to interrupt the painful impulses carried by the direct thoracic cardiac nerves. Complete sensory denervation of the heart can therefore be accomplished by excision of the upper four to six thoracic ganglions or by sectioning the rami between these ganglions and the corresponding intercostal nerves. Most patients with angina pectoris are not good subjects for an operation of this magnitude, and experience has shown that paravertebral alcohol injection is equally satisfactory and carries a negligible risk and very little disability. This has become the treatment of choice. Splanchnic resection for essential hypertension offers a high degree of symptomatic relief to patients suffering from this disease. When performed early in the disease, a high percentage of cases will obtain a material lowering of blood pressure level. Further observation is necessary to decide whether this will result in arrest or cure of the disease in the early stages and whether, even in the absence of blood pressure change, the course of the disease in its later stages is materially altered.

Dermatomyositis.—Against the possibility that a filtrable virus is the cause of the disease there is some determining evidence in one of Turner's patients in whom the disease recurred after complete remission for several years. Most virus infections after recovery confer a permanent immunity. The history of sensitivity to sunlight in two of the patients hinted at the possibility of a disturbance in porphyrin metabolism. The specimens of urine were always yellow, both before and after exposure to the sun, and no abnormality in porphyrin content could be detected spectroscopically. The skin lesions were unlike those of pellagra and there was no evidence of a dietary deficiency. The parenteral administration of crystalline preparations of vitamins B and C in moderately large dosage had no effect. Attention is called to the suggestion of Köster that perhaps the vascular system is the seat of the primary disturbance. In case 2 the albumin content of the subcutaneous edema fluid was almost precisely that of the blood serum. Since biopsy of muscle failed to demonstrate inflammatory or degenerative changes, it may be argued that the high edema fluid protein signified an abnormal vascular permeability independent of inflammation. However, it cannot be denied that inflammatory and degenerative changes do occur in many cases, and these factors no doubt then play an important part in the edema that is so characteristic of the disease.

New Jersey Medical Society Journal, Trenton

34: 1-72 (Jan.) 1937

Occipitoposterior Position and Its Management. R. T. Potter, East Orange.—p. 7.
Conservative Treatment of Eclampsia: Study of 148 Cases. J. R. McCord, Atlanta, Ga.—p. 9.
Diagnosis of Hip Disabilities in Children. H. Taylor, East Orange.—p. 11.
Presentation of Cases Requiring Plastic Repair. L. A. Peer, Newark.—p. 15.
Diverticulitis of the Sigmoid. R. A. Schaaf, Newark.—p. 21.
Roentgen Diagnosis of Diverticulosis and Diverticulitis of Colon. C. F. Baker and W. J. Marquis, Newark.—p. 29.
Diagnosis of Duodenal Ulcer by Aimed Compression Serial Roentgen Technic. M. Kraemer, Newark.—p. 37.

New Orleans Medical and Surgical Journal

89: 333-402 (Jan.) 1937

Oration Commemorating the One Hundredth Anniversary of the Founding of the Army Medical Library, Washington. H. Rolleston, London, England.—p. 333.
Treatment of Acute Intestinal Obstruction. J. L. McGehee, Memphis, Tenn.—p. 339.
Use of Epidural Anesthesia in General Surgery. C. B. Odom, New Orleans.—p. 348.
Rôle of Lactobacillus Acidophilus in Treatment of Disorders of Digestive Tract. W. H. Pipes and W. L. Owen, Baton Rouge, La.—p. 355.
Diabetic Infections and Gangrene. M. Gardberg, New Orleans.—p. 362.
Modern Method for Localization and Treatment of Intra-Ocular Foreign Bodies. M. E. Brown, New Orleans.—p. 369.
Traumatic Rupture of Papillary Muscles of Mitral Valve: Case Report. W. C. Payne, Pensacola, Fla., and H. H. Hardy Jr., New Orleans.—p. 373.

New York State Journal of Medicine, New York

37: 119-230 (Jan. 15) 1937

Lobar Pneumonia in Childhood: Five and a Half Year Clinical Survey at Municipal Hospital. S. L. Ellenberg and A. T. Martin, New York.—p. 119.

Rôle of Allergy in Drug Eruptions. E. W. Abramowitz, New York.—p. 128.

Conservative Treatment of Nasal Sinuses. H. Hays, New York.—p. 137.

Rationale of Treatment of Urinary Infections. D. M. Davis, Philadelphia.—p. 145.

Roentgenologic Consideration of Dysphagia of Esophageal Origin. J. M. Barnes, Buffalo.—p. 152.

Coarctation of the Aorta: Report of Living Case. S. Gitlow, Bronx.—p. 155.

Varicose Veins and Varicose Ulcers: Technic of Injection Treatment. H. J. Shelley, New York.—p. 159.

Twelve Year Medical Survey of Large Commercial Organization. R. F. Carter, F. H. Westcott and A. W. Allen, New York.—p. 162.

Mongolism Occurring in American Indians: Report of Three Cases. J. Sirkin, Newark.—p. 167.

Bundle Branch Block: Diagnosis by Physical Signs. J. A. C. Gray, New York.—p. 169.

Thermal Therapy in Chronic Disease. R. Kovacs, New York.—p. 174.

Northwest Medicine, Seattle

36: 1-38 (Jan.) 1937

Management of Eclamptogenic Toxemia. F. H. Falls, Chicago.—p. 1.

*New Treatment for Trichomonas Vaginitis: Preliminary Report. F. B. Zener, Portland, Ore.—p. 7.

Intratracheal Use of Iodized Oil: Its Therapeutic Value in Patients Suffering from Various Types of Bronchial Pathology. R. M. Balyeat, Oklahoma City.—p. 9.

Atmospheric Causes of Allergy in Western Washington. P. Schonwald, Seattle.—p. 14.

Intrathoracic Perineural Fibroblastoma. G. K. Smith and T. M. Joyce, Portland, Ore.—p. 18.

Suppurative Diseases of Lungs: Their Diagnosis and Treatment. L. H. Clerf, Philadelphia.—p. 20.

Treatment of Acute Osteomyelitis. A. O. Adams, Spokane, Wash.—p. 22.

Diagnosis and Treatment of Anal Fissure. J. W. Mounsey, Spokane, Wash.—p. 24.

Carcinoma of the Breast with Miliary Metastasis. C. P. Larson, Steilacoom, Wash.—p. 26.

Treatment for Trichomonas Vaginitis.—Zener found by experimentation and direct observation that an ointment containing 6.6 per cent vioform with a melting point slightly above body temperature (from 103 to 105 F.) would spread over the entire vaginal mucosa. Traces were present in the vagina after seventy-two hours. The ointment used is hygroscopic. As yet the ideal base for the ointment has not been found. The patients are treated on alternate days. No treatments are given during the menses, but the patient is instructed to douche twice daily with 2 quarts of warm 25 per cent saline solution. When the vagina is thoroughly cleaned, one-half ounce of the ointment, containing 0.75 Gm. of vioform, is instilled high in the vaginal vault. A large glass syringe with a long nozzle is used for this purpose. The patient is instructed not to take douches, except as directed during her menses. Since this method of treatment has been adopted, thirty-eight cases of trichomonas vaginitis have been treated. Nine patients have passed through four menstrual periods without recurrence, nine through three, nine through two and eleven patients are under treatment with definite improvement.

Psychiatric Quarterly, Utica, N. Y.

11: 1-176 (Jan.) 1937

Alzheimer's Disease: Clinicopathologic Report of One Case. G. A. Jervis, New York.—p. 5.

Polycythemia in the Course of Neuropsychiatric Conditions. (Mesodiencephalic Origin of Polycythemia?) A. Ferraro and W. D. Sherwood, New York.—p. 19.

Encephalography. R. R. Steen, New York; A. P. Evans and Mabel R. Matthews, Kings Park, N. Y.—p. 34.

Graphocatharsis in Schizophrenia: Report of Case. P. Milici, Kings Park, N. Y.—p. 44.

Studies in Obsessive Ruminative Tension States: II. Exploration of Psychoneurotic Psychotic Borderland. L. F. Woolley, Towson, Md.—p. 74.

Recurrences of Psychosis with Psychopathic Personality and Psychosis with Mental Deficiency: "A Study of Prison Psychoses." S. C. Karlan, Dannemora, N. Y.—p. 94.

Mortality Among Patients with Epileptic Psychoses. B. Malzberg, Albany, N. Y.—p. 104.

Technical Approaches Used in Study and Treatment of Emotional Problems in Children: Part II. Using a Knife Under Certain Definite Conditions. J. Louise Despert, New York.—p. 111.

Hereditary and Environmental Factors in Causation of Dementia Praecox and Manic-Depressive Psychoses. H. M. Pollock, B. Malzberg and R. G. Fuller, Albany, N. Y.—p. 131.

Puerto Rico J. Pub. Health & Trop. Med., San Juan

12: 169-294 (Dec.) 1936

Some Polymastigote and Hypermastigote Flagellates from Puerto Rican Termites. G. N. Calkins, San Juan.—p. 169.

Studies on BCG: I. Pathogenicity of BCG. R. Thompson and E. Koppisch, San Juan.—p. 209.

Id.: II. Vaccination of Guinea-Pigs. R. Thompson and E. Koppisch, San Juan.—p. 216.

Rubino's Reaction in Leprosy. M. F. Pimentel Imbert, San Juan.—p. 257.

*Hematologic Studies on Malaria in Puerto Rico: Report of One Hundred Cases. R. Rodríguez Molina and J. Oliver González, San Juan.—p. 267.

Hematologic Studies on Malaria in Puerto Rico.—Rodríguez Molina and Oliver González performed hematologic studies on 100 individuals suffering from malaria, 83 per cent of whom presented the chronic and 17 per cent the acute type of case. Though 70 per cent of cases gave red cell counts below four million per cubic millimeter, only 10 per cent showed hemoglobins below 10.2 Gm. (70 per cent); the degree of anemia for the entire group was considered slight, the mean red cell count being 3.95 million and the mean hemoglobin 12.3 Gm. (85 per cent). Examination of stained smears did not show much evidence of active blood formation. A macrocytic anemia was found in 34 per cent of the patients, normocytic anemia in 37, simple microcytic anemia in 16 and hypochromic anemia in 13 per cent. Characteristic leukopenia was detected in only thirty-five cases. Schilling hemograms showed a degenerative shift in the granular leukocytes. No remarkable changes were observed in the platelets or in the sedimentation rate of the red corpuscles. Racial or acquired resistance to the disease and a high animal protein content in the dietary of the population studied are believed to be important factors responsible for the slight degree of anemia encountered. It is inferred from this study that the blood picture in malaria in Puerto Rico is not in itself of diagnostic value apart from the finding of the causative organism.

Radiology, Syracuse, N. Y.

28: 1-130 (Jan.) 1937

*Treatment of Selected Cases of Chronic Catarrhal Deafness by X-Rays. F. W. O'Brien, Boston.—p. 1.

Pituitary and Associated Hormone Factors in Cranial Growth and Differentiation in White Rat: Roentgenologic Study. H. Mortimer, Montreal.—p. 5.

Serial Roentgen Examinations of Chest in University Students: Results of Single Film Studies in Students with Positive Mantoux Reaction. E. A. Pohle, L. W. Paul and S. R. Beatty, Madison, Wis.—p. 40.

*Bilateral Spontaneous Idiopathic Pneumothorax in Apparently Healthy Individuals: Review of Recent Literature and Presentation of Case. F. A. Hasney, West Orange, N. J., and F. Baum, Newark, N. J.—p. 47.

Rare Developmental Abnormality of the Atlas. W. S. Lawrence and W. D. Anderson, Memphis, Tenn.—p. 55.

X-Ray Diffraction Studies of Globular Proteins: I. Egg Albumin. G. L. Clark and J. H. Shenk, Urbana, Ill.—p. 58.

Idiosyncrasy, Hypersensitiveness and Dose Intolerance. I. S. Trostler, Chicago.—p. 68.

Surgical Anatomy of Abdomen: Roentgenologic Study. S. Brown and A. Fine, Cincinnati.—p. 73.

Treatment of Chronic Catarrhal Deafness.—From 1929 to 1935 inclusive O'Brien treated 140 patients by roentgen irradiation: seventy-three were improved as to hearing and tinnitus; the condition in sixty-five was unchanged and it was made worse in two. Of the improved group, sixty-seven had nine treatments to each ear and six received only eight treatments; nine treatments have been designated as the acceptable course or cycle. Accepting a cycle of nine treatments as the optimum, approximately 78 per cent who received it were benefited. No patient has been followed less than a year, the majority for more than three years and some as long as five years. The much abused tonsil did not seem to play a direct part in the beneficial outcome of irradiation of these cases. The x-ray factors employed were 145 kilovolts, 5 milliamperes, 0.25 mm. of copper and 1 mm. of aluminum filter at a distance of 50 cm. over a field 15 by 15 cm.; the exposure lasted five minutes, about 90 roentgens in air being given to each ear-field at one sitting and repeated at weekly intervals for nine treatments. A large field with the hypotenuse of the two right-angles extending from the nares to the mastoid tip was chosen deliberately to include the nasopharynx, the course of the eustachian tube and the mastoid and ear structures because of the accepted relationship of lymphadenoid tissue and infection

to chronic catarrhal deafness, and, at the same time, to include the origin and distribution of the eighth nerve and its communications in the temporal bone for possible neural stimulation. How roentgen therapy brings about improvement in cases of chronic catarrhal deafness may always remain in the realm of controversy.

Bilateral Spontaneous Pneumothorax in Apparently Healthy Individuals.—Hasney and Baum describe a case of idiopathic spontaneous bilateral pneumothorax in an otherwise healthy young person and review the recent literature on the subject. In commenting on the case they are inclined to accept Rossel's theory of "same effect, same cause." There was not the slightest evidence of active pulmonary tuberculosis. The parahilar annular shadows seen on the roentgenogram taken after bilateral reexpansion are, in their opinion, due to bullae described by Schmincke. The bilateral spontaneous pneumothorax was of the alternating type. The first rupture occurred on the right side and the second on the left before the right lung had had the opportunity to reexpand completely. During the third attack the left side collapsed, but an adhesion between the two left pleural layers, which must have formed after the reexpansion following the second attack, prevented complete compression of the left lung. The pneumothorax on the right following the third attack must have been so small and the opening of the superficial bulla so minute that the patient did not notice any discomfort. It was detected only by accident during the last roentgen check-up. As to the treatment of their patient, the authors admit that bed rest and strapping of the chest alone do not guarantee against a further accidental collapse. It is safer to continue the pneumothorax, first on the right, artificially for a while until the x-ray observations show a thickened visceral pleura which, after reexpansion, will remain adherent to the parietal layer. The irritation by artificially insufflated air alone is sufficient, in their opinion, and they would surely apply artificial pneumothorax on the left also if another accident should happen. They do not recommend the use of irritating substances other than filtered air intrapleurally. The ideal procedure in pneumothorax is to keep the pleural sac dry.

South Carolina Medical Assn. Journal, Greenville

33: 1-24 (Jan.) 1937

The Opportunity of the Refractionist. C. W. Evatt, Charleston.—p. 1.
Industrial Hygiene Activities in South Carolina. H. F. Wilson, Columbia.—p. 3.
Prevention of Postoperative Pulmonary Complications. P. P. Vinson, Richmond, Va.—p. 5.
Maternal and Child Health Work in South Carolina. R. W. Ball, Columbia.—p. 6.

Surgery, Gynecology and Obstetrics, Chicago

64: 129-256 (Feb. 1) 1937

Tumors of the Hand. M. L. Mason, Chicago.—p. 129.
*Arterectomy: Follow-Up Studies on Seventy-Eight Operations. R. Leriche, R. Fontaine and S. M. Dupertuis, Strasbourg, France.—p. 149.
Clinical Use of Cyclopropane. U. H. Eversole, L. F. Sise and P. D. Woodbridge, Boston.—p. 156.
Mechanism of Relief of Pain Immediately After Total Thyroidectomy for Angina Pectoris and Congestive Failure. A. A. Weinstein and H. E. Hoff, Boston.—p. 165.
Persistence of Duodenal Ulcers After Suture of Acute Perforation. R. Lewisohn, New York.—p. 172.
Study of Placenta Accreta. F. C. Irving and A. T. Hertig, Boston.—p. 178.
*Initiating Lesions of Renal Calculus. A. Randall, Philadelphia.—p. 201.
Surgical Treatment of Carcinoma of Lung: Technic of Lobectomy and Pneumonectomy. R. H. Overholt, Boston.—p. 209.
*Cruciate Ligament Injuries: Caused by Complete and Incomplete Dislocations; Early and Late Pathology, Symptoms and a Method of Repair. W. R. Cubbins, J. J. Callahan and C. S. Scuderi, Chicago.—p. 218.
Salivary Calculi: Their Treatment by Catheterization and Dilatation of Duct. H. C. Ballon and D. H. Ballon, Montreal.—p. 226.
Differential Diagnosis of Ectopic Gestation by Peritoneoscopy. R. B. Hope, Los Angeles.—p. 229.
Treatment of Perforated Duodenal Ulcers. R. R. Graham, Toronto.—p. 235.
Survey of Appendicitis in San Diego. H. G. Holder and J. T. Wells, San Diego, Calif.—p. 239.

Arterectomy.—Leriche and his associates selected sixty consecutive cases, in which seventy-eight arterectomies were performed. The patients were seen one year, the majority more than three years and a few up to ten years after operation. There were no fatalities or serious complications in this series. In the arteriosclerotic type of arterial occlusion, 54.5 per cent of the patients were definitely relieved of symptoms for a period of years. The thrombo-angiitis group, in about the same number of operations, produced satisfactory results in only 35 per cent. Patients representing five operations failed to return for follow-up examination. Two failures occurred in supposed syphilitic occlusions and three embolic failures occurred in unfavorable cases in which operation was delayed and gangrene had already set in. Ordinarily, if a case of embolism is seen early, arterectomy probably combined with ganglionectomy holds a definite hope for saving a limb, often when embolectomy has failed. The authors' best results in traumatic cases were those in which a fibrosed arterial cord could be resected, with subsequent relief of pain, cyanosis and edema. Since lumbar sympathectomy carries a mortality of 4 per cent or more, arterectomy, with its minimal surgical risk, should be the operation of choice in a majority of cases. Subsequent treatments with a passive vascular exercise unit or heat, massage and exercises may supplement arterectomy to give a greater percentage of fine results. Arterectomy is indicated in localized arterial occlusion of the extremities caused by senile arteriosclerosis, trauma, freezing, after surgical ligature and in favorable cases of embolus and thrombo-angiitis obliterans.

Initiating Lesions of Renal Calculus.—In offering a hypothesis for the origin of stone, Randall formulated two postulates and they have presented the basis for a series of research problems in an effort to prove or disprove their accuracy: first, that an initiating lesion had to exist; second, that any such lesion should be sought for on the renal papillae or close by. It has been a matter of constant observation on roentgen examination that most small calculi are found in the region of the renal papillae. Small renal calculi whose clinical existence has been of short duration (as judged by the patient's history), closely studied with a hand lens, have invariably presented on one side a uniform crystalline growth, while the opposite surface has shown a facet indicative of mural attachment. On examination of the kidneys from 104 necropsies, twelve presented evidence of an unusual picture and a new pathologic lesion. This lesion may be described as follows: On the papilla, generally on its lateral wall or near its tip, is seen an area, which for lack of a better term the author has called a "milk patch." It may be anywhere from the tiniest possible dot to an area measuring from 2 to 3 mm. in diameter, sharply outlined or delicately stellate in appearance and of uniform consistency, though some have shown centers which appear as though the material forming the "milk patch" had been deposited in circles. In all specimens of this character there is every evidence to suggest that the lesion is under the surface of the covering epithelial cells. Microscopic sections of the lesion have shown a deposit of calcium, entirely devoid of any inflammatory evidence, as being laid down in the wall of the renal papilla and in a position which is, in its earliest manifestation, entirely below the surface of the cells covering the papilla. The area involved appears to suffer a definite fibrosis, with changes in the blood supply, and the first deposit of calcium occurs in the cells lining the tubules, which, in turn, show different stages of aseptic necrosis. The next, or second, stage in the development of a stone is exemplified in a kidney removed from the body of a 46 year old man who died of left pyopneumothorax and cardiac failure. Each papilla in this kidney, with one normal papilla as an exception, showed the characteristic "milk patch" deposit; but on the surface of one such "milk patch" could be seen a tiny black dot. This dot is no larger than a grain of pepper or a cinder in an eye, but it stands out in clear distinction to the other papillary lesions of the first variety. Serial sections cut through this tiny speck show that the calcium deposited in this area has lost its covering epithelium and exists as a raw, exposed surface of calcium, at the periphery of which the epithelium dips down to an aseptic ulcer edge. The next, or third, stage in the development of a stone was found in a kidney from the body of a 56 year old woman who died of a malignant ovarian tumor and general carcinomatosis. This showed two papillae with the characteristic "milk patches" and a third papilla with a definite crystal deposit on a similar "milk patch," but in this case the crystal deposit measured approximately 2 mm. in diameter. It was densely adherent to the underlying tissue and, when sectioned, presented a characteristic papillary calcium plaque, and inti-

mately adherent to it and growing from it was the large crystalline calculus. On this calcium plaque a secondary deposit of a definitely different chemical character has been formed; that is, a definite undermining of the edge of the calcium plaque by crystalline deposits and growth of stone. This strongly suggests that, as the stone grows, it gradually encases the calcium plaque by undermining its edges, and, when the stone breaks free, the plaque is torn from its papillary bed and goes away with the calculus. It is the author's belief that, as the secondary deposit, or true calculus, grows, crystallization at the edges of the original plaque gradually undermine the plaque and that the calculus, when it gains its freedom, does so by tearing out the plaque from the wall of the papilla.

Cruciate Ligament Injuries.—Cubbins and his co-workers summarize their cases of dislocations of the knee joint in which there have been ruptures of one or both cruciate ligaments. They have had nine cases of double, four of anterior and two of posterior cruciate ligament injuries. In two cases of complete unreduced dislocations of the knee joint the limbs were shortened and recurved, with a total loss of the use of the limbs. After reduction, the tibial head could be carried in any direction around the femoral condyles and any type of dislocation could be reproduced. In three patients with complete rupture of all the ligaments of the knee joint observed immediately following the injury there was a total loss of function, marked swelling, discoloration and exquisite tenderness over the entire joint. Of these six completely dislocated knee joints there have been four excellent recoveries, one fair and one untreated, a failure. In four cases of old dislocations of the knee joint diagnosed as ruptured cruciate ligaments of the knee, the symptoms were loss of stability or function, the limb breaking down anteriorly or wabbling in a lateral direction; pain or tenderness not marked; either a slight or a negative amount of fluid; no stiffness or limitation; marked passive mobility at all times; very extensive mobility when the patient is put under anesthesia—almost 2½ inches of motion in the anteroposterior direction—and a lateral or medial deviation of the extended leg of from 30 to 50 degrees. The authors have observed no trace of the injured cruciate ligaments remaining in any of the injured joints operated on three months or more after the injury has been sustained, either in the single or in the double type of cruciate ligament injury. In none of the four cases of complete rupture of the cruciate ligaments were the menisci injured or displaced. In the two old injuries to the posterior cruciates both menisci were normal. There were no detached pieces of cartilage, bone or ligament in the joint cavity of any old case. In only one case was there a lesion in the cartilage of the femoral condyles. The ability of the knee joint to stabilize itself if immobilized is remarkable. In their new operative procedure the authors make the limb bloodless with a Martin band and a tourniquet on the upper portion of the thigh. An incision 13 inches long is used. It extends from 10 inches up the thigh down and around the head of the fibula; then a strip of fascia lata 1 inch wide is removed and dissected down to where it has a loose attachment on the lateral condyle of the femur. Another strip posterior to it and of about the same width is then dissected from its base down to where it curves forward and is attached to the head of the tibia. The knee joint itself is then opened. The incision extends down through the skin, through the lateral portion of the vastus medialis, through the fascia and synovia of the knee joint, until the suprapatellar space is exposed, and then down on the head of the tibia for a distance of 3 inches. As this incision is made it can be carried in through the synovial membrane and periosteum of the femur above the condyle about 2½ inches, and the periosteum and synovia elevated to a width of about three-fourths inch. On the head of the tibia a like incision is made down through the periosteum, and the periosteum is dissected up about three-fourths inch. Holes are drilled in these condyles for the placement of the new ligaments, which are twisted slightly. Curved alligator forceps can be passed outward through this lateral condyle to grasp the new ligament and pull it through into the knee joint. The new posterior ligament is carried through the fascia, covering the head of the fibula so that it will have a firm point of fixation, and pushed up beneath the lateral head of the gastrocnemius, the peroneal nerve and the popliteus tendon, through the posterior capsule into the knee joint. It is grasped with forceps as it comes through into the joint, pulled forward and, with alligator forceps, pulled up through the medial condyle of the femur. The new anterior cruciate is now pulled down through the head of the tibia, the ligaments are drawn so that they are firm but not tight, with the limb flexed at an angle of from 25 to 35 degrees, and then they are sutured into their osteoperiosteal beds. The wound in the lateral surface of the thigh and leg is closed with clips. In closing the anterior wound, one should pick up and ligate any vessels with open mouths. Then the capsule is closed with continuous catgut suture, one from below up, and one from above down, a space being left between. The hemorrhage that will certainly follow this procedure can escape through the opening in this capsule, and the skin is closed loosely with clips so that there will be no accumulation of fluid in the knee joint. In the two operations for the repair of the posterior cruciate ligament the same method has been used as just detailed for the posterior cruciate.

Tennessee State Medical Assn. Journal, Nashville

30: 1-40 (Jan.) 1937

Enuresis. W. E. Van Order, Chattanooga.—p. 1.
Subcutaneous Oxygen Therapy. W. Yeiser, Columbia.—p. 5.

United States Naval Med. Bulletin, Washington, D. C.

35: 1-156 (Jan.) 1937

Trend of Venereal Disease in the United States Fleet. K. C. Melhorn.—p. 1.
Human Yaws. C. S. Butler.—p. 6.
Present Day Concepts of Endocrinology. P. F. Dickens and O. J. Brown.—p. 8.
Active Immunization Against Tetanus with Tetanus Toxoid. W. W. Hall.—p. 33.
The Navy and Appendicitis. L. W. Johnson and H. R. Boone.—p. 41.
The Specialist versus the Naval Surgeon. G. F. Cottle.—p. 52.
Aviation Medicine. J. W. Vann.—p. 55.
Evaluation of Modified Schafer Method of Artificial Respiration. F. S. Johnson, J. A. Hawkins and O. D. Yarbrough.—p. 60.
Use of Oxygen in Treatment of Compressed Air Illness. A. R. Behnke and L. A. Shaw.—p. 61.
Pathologic Fractures. F. H. Bowman.—p. 73.

Wisconsin Medical Journal, Madison

36: 1-72 (Jan.) 1937

Nephritis: Phases of Renal Edema. F. D. Murphy, Milwaukee.—p. 17.
Id.: Nephritis from the Standpoint of the Insurance Companies. D. E. W. Wenstrand and R. W. Benton, Milwaukee.—p. 26.
Id.: Use of Cyanates in Treatment of Hypertension. M. H. Barker, Chicago.—p. 28.
Ambulant Treatment of Hernia. A. F. Bratrud, Minneapolis.—p. 34.

Yale Journal of Biology and Medicine, New Haven

9: 199-286 (Jan.) 1937

Ercole Lelli and His Ecorché. H. Cushing, New Haven, Conn.—p. 199.
*Pathways and Production of Pain. J. B. Hamilton, New Haven, Conn.—p. 215.
Congenital Atresia of Aortic Orifice. J. C. McNerney, New Haven, Conn.—p. 229.
Nature of Eclampsia. J. P. Peters, New Haven, Conn.—p. 233.
Bio-Electric Potential Gradients in the Chick. H. S. Burr and C. I. Hovland, New Haven, Conn.—p. 247.
Passive Immunity Experiments in Mouse Typhoid. W. M. Hale, New Haven, Conn.—p. 259.
Historical Note on Capillaries, with Citations from an Early American Text. Isabella H. Perry, New Haven, Conn.—p. 265.
Studies of Apexes of Teeth: Correlation of Bacteriologic, Roentgenologic and Gross Anatomic Findings in Human Necropsies: Part I. Review of Literature: Methods Used: L. W. Burket, New Haven, Conn.—p. 271.

Pathways and Production of Pain.—Hamilton believes that the most adequate of existent theories regarding the production of pain is that of Lewis, which supposes the accumulation in the tissues of a pain substance produced by metabolism. However excited, impulses follow pain fibers, which pass from the viscera through sympathetic trunks but not through the vagus nerve. They are known to result in referred pain. Referred pain, sweating, hyperalgesia and temperature changes are valuable indexes in localizing visceral lesions, in recognizing psychotic cases and in exposing malingering. Pain may also be conveyed from the parietal mesenteries in a manner indistinguishable from visceral pain. In the limbs, individual pain fibers are periarterial for only short distances before passing from blood vessels to nerve trunks. The ideal surgical site for the certain removal of these pathways is at the sympathetic ganglions or posterior nerve roots, since the fibers tend to be more scattered whenever they are peripheral and central to the ganglions.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

59: 395-520 (Dec.) 1936

Pituitary Basophilism Associated with Basophil Carcinoma of Anterior Lobe of Pituitary Gland. H. Cohen and J. H. Dible.—p. 395.
Extrapyramidal Action from Cat's Cerebral Cortex: Motor and Inhibitory. Sarah S. Tower.—p. 408.
Observations on Histopathology of Cerebral Lesions in Disseminated Sclerosis. J. G. Greenfield and L. S. King.—p. 445.
Further Studies on Effect of Hypothalamic Lesions on Carbohydrate Metabolism. D. Cleveland and L. Davis.—p. 459.
Vestibular Phenomena of Central Origin: Experimental Study in Macacus Rhesus. A. Ferraro, S. E. Barrera and G. A. Blakeslee.—p. 466.
Studies on Existence of Paraphysis in Mammalian Embryos. K. H. Krabbe.—p. 483.
*Periodic Somnolence and Morbid Hunger: New Syndrome. M. Levin.—p. 494.

Periodic Somnolence and Morbid Hunger.—Levin cites seven cases from the literature of what may be called "periodic somnolence-hunger," a syndrome characterized by attacks, usually lasting several days or weeks, in which the patient is excessively sleepy and hungry. Besides these cardinal symptoms, the attacks may be further marked by motor unrest and by irritability, difficulty in thinking, forgetfulness, incoherent speech and hallucinations. All these symptoms vanish in the intervals between attacks. The seven patients were all men, and in each the onset was in the second decade. In three the onset occurred soon after an acute illness (respectively, "grip," sore throat with fever and "influenza"). Fulton and others have shown that the frontal lobes contain centers which inhibit gastro-intestinal motility, their excision causing increased appetite, gastro-intestinal hypermotility and intussusception. These centers form part of the highest cerebral centers, more specifically, of the highest motor centers. The hypothesis is offered that "periodic somnolence-hunger" is due to excessive "inhibitability" or exhaustibility of the highest centers. The untimely and prolonged inhibition of these centers will explain the manifestations of the syndrome. Inhibition of the highest cerebral centers will explain the somnolence and the mental symptoms; inhibition of the centers described by Fulton, the hunger and the motor unrest. Excessive inhibitability of the highest centers is probably the result of some alteration of their component cells.

British Journal of Radiology, London

10: 1-72 (Jan.) 1937

*Calcified Intracranial Tuberculomas. J. P. Martin.—p. 5.
Survey of Fields of Radiation in Female Pelvis for Some Typical Distributions of Radium Used in Treatment. F. D'Abreu and T. E. Banks.—p. 19.
Diverticula of Duodenum. G. Friedlaender.—p. 26.
Significance of Time Factor in Determination of Quantitative Biologic Reaction to a Given Dose of Radiation. W. H. Love.—p. 38.
The Size of the Living Heart. J. H. Barrett.—p. 47.
Photographic Method of Comparing Intensities of X-Rays. H. L. Brose and E. H. Molesworth.—p. 55.
Carcinoma of the Breast. J. E. A. Lynham.—p. 60.

Calcified Intracranial Tuberculomas.—Martin states that calcified intracranial tuberculomas are usually discovered in patients who come under observation because of fits. They are not ordinarily associated with signs of intracranial pressure. The patients usually present evidence or history of tuberculosis elsewhere in the body. The age of the patients in the cases referred to ranged from 12 to 57 years. In the author's experience, calcified tuberculomas are usually situated in the cerebral hemispheres; they may, however, be situated under the tentorium. The majority of them lie near the surface of the brain. In a large proportion of cases, two or more such calcified lesions are present. They are very variable in size. By the time they are discovered by x-rays they are usually densely calcified. The shadows which they cast on the films are often very irregular, with a tendency to a lobulated appearance, and have a jagged or serrated outline. When calcification is not uniform throughout, it is most intense at the periphery or part of the periphery of a mass. For this reason the masses are sharply demarcated. These appearances correspond with the physical characters of extinct tuberculomas removed from the brain by operation or at necropsy. The chief distinguishing features roentgenologically, from calcified tumors, are the sharp delimitation and very rough or jagged surfaces. The intensity of calcification may also serve as a guide in many cases.

British Journal of Urology, London

8: 319-446 (Dec.) 1936

Some Observations on Decapsulation and Denervation of the Kidney. S. K. Sen.—p. 319.
Conservative Treatment of Carcinoma of Prostate. C. A. R. Nitch.—p. 329.
Observations on Formation and Prevention of Calculi. I. Snapper, W. M. Bendien and A. Polak.—p. 337.
Early Diagnosis and Radical Treatment of Carcinoma of the Prostate. E. L. Keyes and R. S. Ferguson.—p. 346.

British Medical Journal, London

2: 1297-1344 (Dec. 26) 1936

Prostatic Obstruction and Indications for Various Methods of Treatment. J. C. Ross.—p. 1297.
Tuberculosis of Lower Lobe. R. Viswanathan.—p. 1300.
Nervous Complications Following Treatment by Gold Salts. F. G. Lescher.—p. 1303.
Intestinal Tuberculosis Limited to Appendix. W. Pagel and E. Weichherz.—p. 1305.
*Referred Pain and in Particular That Associated with Dysmenorrhea and Labor: Preliminary Report. G. W. Theobald.—p. 1307.
Pentothal Sodium Anesthesia. O. J. Murphy.—p. 1308.

Referred Pain Associated with Dysmenorrhea and Labor.—Theobald states that stimulation of the autonomic nerve endings in the cervix by silver nitrate causes a referred pain appreciated in the area of the skin supplied by branches of the first lumbar nerve. This pain may be abolished by local anesthesia. Dysmenorrhea is largely, if not entirely, a referred pain appreciated in the area of skin supplied by branches of the first lumbar nerve, and the pain may be abolished by local anesthesia. The pain in the lower part of the abdomen and the lateral backache of labor are manifestations of viscerosensory referred pain appreciated in the area of skin supplied by the first lumbar nerve. The sacral backache of labor is a pain referred from one somatic nerve to others of the same spinal segments. While it is too early to be dogmatic, there seems every reason to believe that a simple and safe technic can be evolved to render childbirth painless.

East African Medical Journal, Nairobi

13: 263-294 (Dec.) 1936

Bilharzia Disease. K. W. Allen.—p. 264.
Twenty-Five Years of Tropical Medicine. R. Y. Stones.—p. 271.
Maternity and Child Welfare Work in Nyasaland. Janet Welch.—p. 282.

Edinburgh Medical Journal

44: 1-64 (Jan.) 1937

Clinical Recollections and Reflections: IX. Conservative Treatment of Acute Infections. D. Wilkie.—p. 1.
The Doctor and the Public Happiness. Horder.—p. 10.
*Study of Contractions of Nonpregnant Human Uterus. E. M. Robertson.—p. 20.
Experiments in Intestinal Obstruction: Rôle Played by Diminution of Effective Circulating Blood Volume in Acute Intestinal Obstruction. I. Aird.—p. 28.
Studies in Method and Standardization of Blood Examination: III. Hemoglobinometry by a Whole-Blood Method. W. F. Harvey.—p. 33.
Sarcomatosis in Fowls Following Weasel Bites, with Discussion on Tumor Formation in General. J. P. McGowan.—p. 37.
Studies on Carbohydrate Metabolism in Nervous and Mental Disorders: II. Comparison of Hyperglycemic Index and Choline Esterase Activity in Anxiety and Depressive States. H. Tod and M. S. Jones.—p. 46.

Contractions of Nonpregnant Uterus.—Robertson made use of the intra-uterine balloon method in determining the contractions of the nonpregnant uterus. He obtained twenty records of twelve women. Of sixteen records obtained in the second half of the menstrual cycle fourteen show not only spontaneous uterine activity but also good responses to solution of posterior pituitary. In eight of these fourteen instances endometrial specimens were obtained immediately after the termination of the recording, and seven of these specimens showed secretory changes in the glandular and stromal cells. Therefore in seven cases, at least, uterine activity was recorded in the presence of an active corpus luteum and not in the absence of luteal influence as would have been the case in an anovulatory cycle. In one instance the curves were atypical. In this case two recordings were taken on the twenty-second day of

two successive cycles and on both occasions, although there was marked spontaneous activity, no rise of muscle tone or increase in the contractions resulted from the injection of solution of posterior pituitary. No clue to the cause of this refractoriness was revealed either by palpation of the pelvic organs or by microscopic examination of the endometrium. In another instance, although the menstrual dates placed the day of the observation of the uterine behavior as the seventeenth of the cycle, and it was known that the intermenstrual periods usually lasted less than twenty-eight days, the endometrium was proliferative in type and not, as was expected, secretory. This case demonstrates well the importance of endometrial examination as a means of obtaining collateral evidence of ovarian function, especially as regards the recognition of an anovulatory cycle.

Lancet, London

2: 1445-1502 (Dec. 19) 1936

Lobectomy in Bronchiectasis. W. H. C. Romanis and T. H. Sellors.—p. 1445.
Determining Infectivity of Bacteria for Their Host, with Especial Reference to Pathogen-Selective Culture. M. Solis-Cohen.—p. 1447.
Clinical Aspects of Outbreak of Typhoid Fever. S. W. Smith.—p. 1450.
Surgery of Hematemesis in Chronic Peptic Ulcer. M. J. Smyth and F. d'Abreu.—p. 1453.
Treatment of Glomerulonephritis by Antigen. H. B. Day.—p. 1456.
*Chronic Leukopenic Lymphadenosis Complicated by Tuberculosis. F. P. Weber and A. Schlüter.—p. 1459.
Cardiovascular Effects of Benzedrine. E. W. Anderson and W. C. M. Scott.—p. 1461.

Lymphadenosis Complicated by Tuberculosis.—In the case of chronic lymphadenosis that Weber and Schlüter report the permanence of the leukopenia and granulocytopenia was a striking clinical feature. In the twenty-seven differential leukocyte counts taken at the hospital during the patient's life the average percentage of lymphocytes was 81, while the total leukocyte count averaged 3,407. After the patient's death the typical interacinous lymphocytic infiltration of the liver seen by microscopic examination, as in cases of lymphatic leukemia, was by itself sufficient to prove the correctness of the lymphadenosis explanation of the clinical features. But the miliary tuberculous process at the end was not suspected before the postmortem examination. The presence of some latent, quiescent tuberculous focus may have tended to make the lymphadenosis one of the aleukemic kind and hindered its active progress, though afterward an acute miliary resuscitation of the tuberculous process caused the death of the patient.

Medical Journal of Australia, Sydney

2: 805-838 (Dec. 12) 1936

Fractures of Lower Part of the Leg. I. B. Jose and A. L. Dawkins.—p. 805.
Some Observations on Diagnosis and Prognosis in General Medicine. L. E. Hurley.—p. 808.
Modern Treatment of Squint and Prevention of Blindness. J. B. Hamilton.—p. 815.
Operation of Cerebral Decompression as Practiced by the Natives of New Britain Fifty Years Ago. I. I. Brodsky.—p. 817.
Colorimetric Determination of Creatinine in Urine and Blood with 3, 5-Dinitrobenzoic Acid. A. Bolliger.—p. 818.
Improving Efficiency of Mechanically Rectified X-Ray Generators. C. E. Eddy.—p. 821.

South African Medical Journal, Cape Town

10: 823-850 (Dec. 26) 1936

Fifty Years Ago or So. D. C. Watt.—p. 825.
Some Biologic Aspects of Aviation. E. Jokl.—p. 830.
Head Injuries in General Practice. L. S. Williams.—p. 833.
*Treatment of Pneumonia When Artificial Pneumothorax Cannot Be Employed. I. Kaplan.—p. 835.
The Registration of Medical Specialists. E. L. Ferguson.—p. 838.

Treatment of Pneumonia.—Kaplan's technic consists in strapping the chest with an elastic adhesive bandage applied from the normal side across the front of the chest and around the affected side to the back. The necessary stretch is applied to the bandage until the patient feels relief of pain in breathing. The distal end is then attached to the normal side. The best procedure is to apply the upper band high up into the axilla. The lower band is applied in the same manner but incorporates the eighth, ninth and tenth ribs and upper portion of the rectus muscle. The majority of patients complain of abdominal pain due to the added strain exerted on the extraordinary muscles of respiration when coughing. A third band is applied midway between the first two or over any painful area of the affected side. When both lungs are affected the strapping is applied to form a complete hoop. Relief is obtained instantaneously. The agitated clenching of teeth and anxious expression is replaced by peaceful, painless respirations. The pulse improves and the patient is able to rest. The extremities are wrapped in elastic crape bandages in order to assist in combating the capillary dilatation. In this manner the circulating volume of blood is increased and thereby tends to stave off heart failure. Whenever the temperature is above 102 F., four-hourly doses of from 0.25 to 1 Gm. of quinine urea in 5 cc. of distilled water is administered. This is continued until three doses have been given. Potassium iodine and creosote are both excellent drugs. Potassium iodine acts as a bactericide and liquefies the tenacious secretions which increase the coughing. Creosote is antiseptic and diminishes secretions by allaying irritation. Digitalis in pneumonia uncomplicated by heart disease is contraindicated. Ten cases are described in which the foregoing treatment has proved successful.

Quart. Bull., Health Org., League of Nations, Geneva

Special Number: 571-746 (Nov.) 1936

Comparisons, as Regards Unit Value, Between Original International Insulin Standard and Proposed New Standard. J. M. Hershey and A. H. Lacey.—p. 589.
Assay of Crystalline Insulin by Mouse-Convulsion Method. H. A. Procter and J. G. G. Garden.—p. 599.
Assay of International Crystalline Insulin Standard by Mouse Method. D. A. Scott.—p. 607.
Comparison of Proposed Crystalline Standard with Present International Insulin Standard. Kathleen Culhane Lathbury.—p. 610.
Comparison of Proposed New International (Crystalline) Standard Insulin with Current International Standard. J. W. Trevan.—p. 622.
Comparison of Crystalline Insulin Preparation Designed for New International Standard with the Old International Standard Insulin of 1924. A. M. Hemmingsen and M. Weitze.—p. 625.
Comparison of the Old International Insulin Standard with the New Crystalline Standard (Rabbit Method). G. B. Walden.—p. 629.
Evaluation of the New International Standard Insulin by the Rabbit and Mouse Methods of Assay. H. P. Marks and C. Pak.—p. 631.
New Insulin Standard, and Redefinition of Unit in Relation Thereto. Report of the International Conference of Experts to the Permanent Commission on Biologic Standardization.—p. 656.
*Proposed International Standard for Gas Gangrene Antitoxin (Histolyticus). C. Jensen.—p. 659.
Memorandum Concerning an International Standard for Gas Gangrene Antitoxin (Histolyticus). L. E. Walbum and G. C. Reymann.—p. 690.
Memorandum Concerning a Proposed International Diphtheria Antitoxin Standard for Use in Flocculation Test. C. Jensen.—p. 695.
Memorandum Concerning Titration of Tetanus Antitoxin: Progress Report. C. Jensen.—p. 702.
Antipoliomyelitis Convalescent Serum: Preliminary Report on Proposed International Standard Antipoliomyelitis Convalescent Serum. T. Madsen and C. Jensen.—p. 708.
Report on International Biologic Standards Maintained at the National Institute for Medical Research, Hampstead, London, on Behalf of the Health Organisation of the League of Nations. P. Hartley.—p. 713.
Report on International Biologic Standards Maintained at the Statens Serum Institut, Copenhagen, Denmark, on Behalf of the Health Organisation of the League of Nations. C. Jensen.—p. 728.
Simple Laboratory Method for Desiccation of Serum and Other Protein Solutions. P. Hartley.—p. 735.

Proposed Standard for Gas Gangrene Antitoxin (Histolyticus).—For the purpose of the international enquiry, according to Jensen, a dry histolyticus antitoxin prepared by the Statens Serum Institut in a glycerol solution containing 20 provisional units per cubic centimeter was distributed, together with a preparation of histolyticus antitoxin of unstated potency, the experts concerned being invited to determine the potency of the latter preparation in terms of the provisional unit suggested. To facilitate the work, a preparation of dry stable histolyticus toxin was supplied to all participants. The conclusions drawn are that gas gangrene antitoxin (histolyticus) can be assayed with a high degree of accuracy, that dry, stable preparations of gas gangrene antitoxin (histolyticus) can be prepared and assayed in terms of an accepted standard preparation, and that accurately standardized solutions can be prepared which are suitable for purposes of biologic assay. It is recommended that the Permanent Commission on Biological Standardisation should accept the dry stable preparation of gas gangrene antitoxin (histolyticus) prepared at the Statens Serum Institut, Copenhagen, as the international standard for this antitoxin, and that the commission should define a unit, in terms of this standard preparation, for adoption for international use.

Bulletin de l'Académie de Médicine, Paris

117: 53-84 (Jan. 12) 1937

Need for Union Between Central and Local Authorities for Regional Sanitation. Loir, Sanarens and Legangneux.—p. 60.
Local Action of Estrogen on Breast of Male Guinea-Pig. J. C. Mussio-Fournier, A. Albrieux and W. Buno.—p. 64.
*Wakening Hygiene and Exercise. M. Boigey.—p. 67.
Action of Lead and Copper Ions on Sarcomatous Fibroblasts in Culture. J. Verne and C. Sannié.—p. 70.
Hippocratic Origin of Word Hormone. F. Jayle.—p. 73.
Respiratory Heart Curves Associated with Pneumocardiac Synchronism in the Dog. E. de Somer.—p. 77.

Wakening Hygiene and Exercise.—Boigey cites three cases of sudden death during the morning exercises and explains that exercises which are appropriate for younger persons should be specially adapted for people past the age of 50 years, notably those with organic or functional disorders. After that age it is not wise to get up rapidly from bed and it is dangerous to exercise in the dorsal posture and to raise the lower extremities: this movement produces the effect of a hydrostatic blow on the walls of the cerebral blood vessels. Dizziness and even fainting may result from it. These persons should perform their exercises in the upright position, assuming an attitude which is normal for them in their waking and working hours. Certain changes take place during sleep, such as slowing of the pulse and lowering of the blood pressure. At the moment of awakening there is a rise in blood pressure, a certain degree of congestion occurs in sinuses, and the circulation of the brain becomes stronger. Exercise at this time increases the cerebral congestion, which is not equilibrated by the constrictive action of a torpid vasomotility that needs time to recover its full activity. It is therefore important for these subjects to stay in bed long enough to allow the circulation to become normal again. Persons beyond 50 years of age and all those with hypertension should then dress to avoid sudden cooling of their bodies before proceeding with their exercise. They should avoid repeated lowering of the head below the level of the belt line. Forceful flexions and extensions of the thorax have a congestive effect on the brain, do not by any means improve the abdominal circulation and may even do harm to the intestine. The author thinks that these persons should exercise between 4 and 6 p. m., as at that time of day their organic temperature, muscular strength and general vitality are at their best. The exercises should be done without much effort and speed, because their main object is to conserve the suppleness of the muscles.

Presse Médicale, Paris

44: 2113-2128 (Dec. 30) 1936

*Attempt at Surgical Treatment of Lateral Syndrome of Medulla of Vascular Origin (Wallenberg's Syndrome) in Angina Pectoris. R. Leriche and Apfeel.—p. 2113.
Impairment of Certain Endocrine Glands in Course of Chronic Alcoholism: Pathogenic Interpretation. M. Villaret, L. Justin-Besançon, J. Delarue and H.-P. Klotz.—p. 2115.
Sign of Pathognomonic Detachment of Hydatid Pulmonary Cyst. Nguyen-Dinh-Hoang.—p. 2117.

Angina Pectoris.—Leriche and Apfeel treated a man who had been suffering for eighteen months from daily attacks of angina pectoris. The patient had diabetes and had been suffering for three months from Wallenberg's syndrome. The syndrome, the result of an obliteration of the inferior cerebellar artery, is characterized by a transient hemiplegia, hemianesthesia and pains on the side opposite the lesion. There were also atactic symptoms and a tendency to fall to one side. Added to this was paralysis of the muscles of deglutition, of the soft palate and of the vocal cords. After a stellate infiltration and in an attempt to bring about a favorable reaction on the medullary and the coronary circulation, they resected the stellate ganglion and the roots of the vertebral nerve. Two days after the operation the patient lost his bodily deviations and his ataxia. All his movements became easy, and no sign of cerebellar deficiency remained. At the end of three weeks the patient had a hyposystolic attack and most of his medullary symptoms reappeared and lasted for a few weeks. But he gradually recuperated and three months after the operation the angina, vertigo and diplopia as well as other cerebellar symptoms had completely vanished, except the painful anesthesia of the chest and the right lower extremity. After seven months the recuperation was still better, even in the right leg. Although the future of such patients is uncertain, the fact remains that in this case the intervention surpassed all hope. This result shows that, in vascular syndromes of the brain with definite symptoms of irreversible deficiencies, a sympathectomy may be of great benefit. It is further certain that in their case first the stellate infiltration and then the stellectomy (roots of the vertebral nerve originating from the superior pole of the stellate ganglion) have considerably modified the outcome.

45: 41-56 (Jan. 9) 1937

*Is Resection of Splanchnic Nerves Justified in Treatment of Permanent Essential Arterial Hypertension? H. Hermann and L. Sabadini.—p. 41.
Bacterioserologic Methods in Tracing of Persons Who Had Been the Cause of Puerperal Fever. J. Drbohlav.—p. 44.

Resection of Splanchnic Nerves in Treatment of Hypertension.—Hermann and Sabadini state that most of the methods advocated for the treatment of permanent essential hypertension are difficult of execution and for this reason they have limited themselves to reaction of the splanchnic and sympathetic nerves. Essential hypertension may be permanent or paroxysmal. Paroxysmal hypertension is often accompanied by a medullary adrenal tumor having the characteristics of a benign adenoma. This tumor is at times juxta-adrenal of a paraganglionic type. This is quite natural when the sympathetic origin of the adrenal medulla is considered. Both are derived from the ectoderm. The current surgical practice is complete adrenalectomy. Quite different is the case in permanent essential hypertension, in which the lesions are much less constant. The hypertrophic gland shows a medullary hyperplasia and increased hormonic contents. It is much too hazardous to assail the gland directly. It is more advantageous to dry out the secretion either by denervation or by devascularization, or better still by resecting its secretory nerve, the splanchnic nerve. The latter method is superior because it cuts the vasoconstrictor nerves, thus producing vasodilatation. The most frequently employed method is the posterior, lateroverterbral, subserous (subpleural or subperitoneal). It may be high central or low. Pende has recommended anesthesia of the nerve with procaine hydrochloride in hypertension crises, to be followed, in patients not fit to be operated on, by unilateral or bilateral alcoholization of the nerve. But the splanchnic nerve does not alone innervate the adrenal capsule. There are posterior filaments emanating from the terminal trifurcation of the nerve and from the adrenal ganglion. It also receives branches from the diaphragmatic, renal and solar plexuses. Besides, there are often anastomoses between the right and the left splanchnic nerves. All this shows a multiplicity of origins, but only in man. In the dog, every adrenal gland gets its secretory nerves solely from the homolateral splanchnic nerve. All these as well as the physiologic and clinical considerations lead the authors to the realization that the pathogenesis of permanent essential hypertension is not sufficiently known to justify conclusions as to its surgical treatment. The facts given by the authors seem to be in accord with certain therapeutic results. But in order to confirm them further, stricter scientific observations are suggested. In only a few cases has splanchnicectomy greatly improved a state of hypertension which has otherwise resisted all other treatment. They especially underscore the fact that the main body of the splanchnic nerve consists of centrifugal and centripetal conductors. On cutting them one interrupts not only the vasoconstrictor and adrenal secretory fibers but also the sensitive paths used by the reflexes originating in the abdominal viscera.

Annali di Ostetricia e Ginecologia, Milan

58: 1647-1823 (Dec. 31) 1936. Partial Index

*Behavior of Total Iron of Blood in Normal Pregnancy. S. C. Russo.—p. 1647.
Relation Between Thymus, Internal Genitalia and Hypophysis: Experiments. F. Matteace.—p. 1715.
Curves of Glycemia and Amino-Acidemia from Dextrose in Pregnancy. A. Fumarola.—p. 1735.
Plurineoplastic Association (Sarcoma and Fibromyoma) in Uterus: Case. F. Putsu Doneddu.—p. 1743.

Total Iron of Blood in Normal Pregnancy.—Russo states that the amount of total iron in the blood of normal pregnant women increases rapidly during the first two months of preg-

nancy from the normal figure of 47 mg. per hundred cubic centimeters of blood to 49 mg. and decreases slowly after the second month to reach 42.5 mg. by the ninth month. Immediately after delivery and during the puerperium, the amount of total iron in the blood increases again to normal figures. Coincidentally with the increase of iron during the first two months there is diminution of the number of erythrocytes and of the amount of hemoglobin in the blood, which continues slowly after the third month of pregnancy and reaches the lower figures by the ninth month. The diminution of the amount of total iron in the blood which takes place during the last six months of pregnancy is not proportional to that of the number of erythrocytes and the amount of hemoglobin during the same period of pregnancy. In the course of normal pregnancy the amount of total iron in the blood diminishes, but that of relative iron increases. The relative iron increase is due to the presence of iron in transit and other types of iron, not combined with hemoglobin, in the blood. This statement is proved by the fact that the ratios iron : hemoglobin and iron : erythrocytes are increased.

Policlinico, Rome

44: 1-60 (Jan. 15) 1937. Surgical Section

Primary Atrophy of Kidney Without Hydronephrosis Following Ureteral Ligation: Experiments. F. De Victoriis-Medori.—p. 1.
Volkmann's Ischemic Contracture: Surgical Treatment. G. Montemartini.—p. 12.
Embolism of Pulmonary Artery and of Arteries of Limbs. V. Palumbo.—p. 19.
*Biliary Peritonitis Without Perforation of Biliary Tract. G. Scoppetta.—p. 39.

Biliary Peritonitis Without Perforation.—Scoppetta says that the pathologic picture of biliary peritonitis without perforation of the gallbladder or of a segment of the biliary tract is that of acute peritonitis. There is acute abdominal pain all over the abdomen, especially located in the right iliac fossa. There is also contracture of the abdominal wall, especially of the right side, and general symptoms of an acute abdominal condition. The diagnosis of biliary peritonitis is difficult. The treatment is surgical and necessarily immediate. The selection of the operation is governed by the condition of the patient. In general, the operation of choice is cholecystectomy. Frequently the condition coexists with calculosis. In rare cases it develops in persons who had cholecystectomy performed. The bile or bile fluid in varying amount and of varying quality, and containing pancreatic ferments, is found free in the peritoneum. Examination of the gallbladder removed by cholecystectomy shows that the structure is enlarged, edematous and with thinned walls, especially at the fundus. The thinness seems to be near perforation. On macroscopic examination the mucous membrane is frequently found to be hemorrhagic and ulcerated. Microscopic examination shows absence of the epithelium of the mucosa, fibromuscular destruction and infiltration, formation of microscopic abscesses, changes in the blood vessels and inflammation and necrosis of the walls of the gallbladder, most intense at the areas of thinness of the structure. Macroscopic changes can be observed also in the omentum, the pancreas and certain intestinal segments. The author reviews the various theories on the pathogenesis of biliary peritonitis without perforation and reports a case in which the patient recovered after cholecystectomy. The general picture of the disease and the macroscopic and histologic signs of the removed gallbladder of the author's case corresponded to those previously described.

Lisboa Médica

13: 767-866 (Dec.) 1936

Intra-Arterial Injections in Hematogenic Infections of Kidney. R. Dos Santos.—p. 767.
*Hemoleukocytic Picture and Sedimentation Speed in Diagnosis of Tuberculosis of Children. C. Ferreira, S. Nunes and P. Leite.—p. 771.
Examination of Gastric Secretion: Critical Study of Methods. J. H. Cascão de Anciães and C. Trincão.—p. 809.

Leukocyte Hemograms and Sedimentation Speed in Infantile Tuberculosis.—Ferreira and his collaborators studied the leukocyte hemograms and the sedimentation speed of the erythrocytes in children suffering from different forms of tuberculosis in evolution. A general model of a hemogram of changes of the leukocytes in tuberculosis in children cannot be made because the changes are different in all cases. There is leukocytosis and neutrophilia in nearly all cases and a deviation of the ratio of segmented and nonsegmented neutrophils in all cases. Monocytes are of no diagnostic value because of their irregular behavior. The sedimentation speed is increased in the blood of tuberculous children. This increase depends on a diminished resistance of the patient and is not related to the localization and phase of evolution of tuberculosis. According to the authors, leukocyte hemograms and the sedimentation speed are complemental procedures to the tests commonly used in diagnosis of tuberculosis in children. Their value is that of orientation and the results have to be verified by those of clinical and roentgen examinations of the patient as well as by laboratory tests.

Prensa Médica Argentina, Buenos Aires

24: 123-176 (Jan. 20) 1937. Partial Index

*Question of Importance of Cutaneous Sensitivity to Gold Salts in Pulmonary Tuberculosis. A. A. Raimondi and W. D'Amato.—p. 123.
Bronchiectasis and Septic Foci. J. J. Beretervide and A. Caruso.—p. 128.
Thoracoplasty: Instruments. R. Finochietto.—p. 134.
Encephalopathy in Child: Case. J. R. Mendilaharzu and G. A. Schiavone.—p. 138.
Leukemic Retinitis: Case. E. Adrogué and J. Tettamanti.—p. 152.

Test of Cutaneous Sensitivity to Gold Salts in Pulmonary Tuberculosis.—Raimondi and D'Amato state that in 1935 Chiucini and Aradas tested the cutaneous sensitivity to gold salts as a guide to indication for gold treatment in pulmonary tuberculosis. The test consisted in the subcutaneous injection of 0.1 cc. of a 1 per thousand solution of a gold preparation (phosphocrysol). A positive reaction showed the appearance of an area of more or less intense redness around the point of injection. The reaction developed shortly after performance of the injection and was sometimes associated with fever. The red spot lasted for a few days and then disappeared. According to the originators of the test, a positive reaction showed intolerance to gold treatment and, when tolerated, the results of the treatment on pulmonary tuberculosis were unsatisfactory, while a negative reaction indicated good tolerance and good response of the patient to gold treatment. Raimondi and D'Amato made the test on a group of patients suffering from different forms of pulmonary tuberculosis for verification of the value of the test. They found that 50 per cent of the persons with negative reactions presented intolerance to the treatment and 69 per cent of those with positive reactions had good tolerance. The results of the treatment have nothing to do with the reactions, positive or negative. They depend on the form and evolutional phase of the pulmonary tuberculosis. The authors state that the test of cutaneous sensitivity is of no use as a guide to indications for gold treatment in pulmonary tuberculosis.

Revista de Tuberculosis del Uruguay, Montevideo

5: 517-672 (No. 5) 1936. Partial Index

Section of Adhesions (Jacobaeus) in Inefficient Pneumothorax in Child. P. Cantonnet Blanch, H. Lieutier and H. Cantonnet Blanch.—p. 534.
Neuritis of Median Nerve in Course of Gold Salts Treatment in Pulmonary Tuberculosis: Case. F. D. Gomez.—p. 563.
Pulmonary Tuberculosis and Syphilis. F. D. Gomez and A. R. Ginés.—p. 581.
Intravenous Injections of Sodium Benzoate in Pulmonary Suppuration. E. D. Anaya and E. de Boni.—p. 594.
*Semeiologic Value of Grocco Triangle. R. A. Piaggio Blanco, C. Sayagués Laso and R. A. Caimi.—p. 606.

Semeiologic Value of Grocco's Sign.—Piaggio Blanco and his collaborators state that Grocco's sign in pleurisy is rare (a frequency of 6.5 per cent of the cases). It appears only in certain cases of abundant pleurisy. Fluid is obtained by puncturing the area of dulness, whereas one fails to obtain any by puncturing the corresponding area in which there is no dulness. This fact and the results of an injection of 0.05 Gm. of methylene blue at the area of contralateral dulness after removal of fluid show that the appearance of Grocco's sign is due to contralateral presence of exudative or transudative pleuritis. Other pathogenic theories on the significance of Grocco's sign are erroneous. The simultaneous appearance of pleurisy and of Grocco's sign in cases in which the latter makes its appearance is the result of simultaneous development in the posterior costomediastinal culdesacs of pleurisy on one side

and a pleural reaction with formation of exudates or transudates on the contralateral side. The authors give the sign the name of both discoverers: Koranyi-Grocco's sign.

Deutsche Zeitschrift für Chirurgie, Berlin

248: 147-410 (Dec. 28) 1936. Partial Index

Malignant Tumors of the Ureter. H. Kümmell.—p. 147.
Unusual Pyocyaneus Infection of Urinary Passages with New Stone Formation Following Pyelolithotomy. E. Roedelius.—p. 167.
*Operative Treatment of Puerperal Sepsis. T. Heynemann.—p. 198.
Bleeding into Musculature in Case of Hemophilia. T. Fahr.—p. 208.
Early Treatment of Separation of Epiphysis of Femoral Head in Adolescence. C. Mau.—p. 214.
*Effect of Cod Liver Oil Dressings. H. Kümmell and W. Jensen.—p. 238.

Operative Treatment of Puerperal Sepsis.—According to Heynemann, the main consideration in the treatment of puerperal sepsis is the removal of the septic focus through exposure and drainage or through extirpation of a suppurating organ. The localization of such foci constitutes the real problem in the treatment of puerperal sepsis. Vein ligation is seldom indicated. It is to be considered only in cases in which sepsis is of thrombophlebitic origin. The operation of vein ligation is technically not difficult. The difficulty lies in the uncertainty of its indications. Hysterectomy is not indicated in the treatment of sepsis. The only exceptions to this rule are the gas bacillus infection of the uterine musculature and, occasionally, an infected myoma or abscess of the uterine wall in the course of the puerperium. These complications, however, are unusual. Hysterectomy is likewise to be considered in certain cases of life threatening hemorrhages developing in the course of a febrile puerperium or due to retained placental tissue.

Effect of Cod Liver Oil Dressings.—Kümmell and Jensen state that wounds treated with cod liver oil ointment heal more quickly. Wounds irrigated with cod liver oil ointment likewise displayed an increased tendency to healing. The favorable effect was evident at a distance away from the irrigated area. The authors found in their experiments that the cod liver oil alone did not exhibit a necrolytic effect. However, necrolysis was definitely increased in the presence of pus. They did not observe any effect of cod liver oil dressings on the growth of bacteria in rabbits. The effect of the cod liver oil on the toxicity of pus was quite evident in animal experiment from the fact that the mortality was reduced 30 per cent.

Klinische Wochenschrift, Berlin

16: 1-40 (Jan. 2) 1937. Partial Index

*Cystine Disease During Early Childhood. H. Beumer and W. Wepler.—p. 8.
Determination and Significance of Elimination of Vitamin C in Urine. K. Wachholder and P. Hamel.—p. 10.
Vitamin B_2 (Lactoflavin) and Suffocation of Isolated Frog Heart. S. Dietrich and E. Pendl.—p. 13.
Method of Measurement of Erythrocytes. W. Lieberherr.—p. 17.
Interesting Case of Allergic Hepatopathy. P. von Végh.—p. 19.
Auscultatory Gap in Measurement of Blood Pressure. H. Siedek.—p. 21.

Cystine Disease During Early Childhood.—Beumer and Wepler direct attention to extensive cystine deposits in the organs during early childhood, pointing out that this condition was first described in 1903 and again in 1924. The condition was never correctly diagnosed during life, but the author thinks that a knowledge of the characteristic clinical picture ought to make this possible. He reports the case of a child that came under his observation first at the age of 2 months on account of otitis media. At that time the development of the child seemed normal, but at the age of 10 months the child was in a condition of severe atrophy although it had been breast fed for nine months. The constant loss of weight had begun after an attack of measles. The child was kept under clinical observation for four months, but there was practically no change, except a slight increase in weight, which was lost again almost immediately after the child left the hospital. The urine always contained albumin and sugar. On the basis of the clinical aspects, the case was diagnosed as renal diabetes and renal dwarfism. The child died at the age of 18 months and the necropsy corroborated the clinical assumption of renal disease. Examination of spleen, liver, kidneys and thymus revealed large masses of a substance that was identified as cystine. The histologic changes were severest in the kidneys. A comparison of this case with those reported in the literature reveals considerable similarity. Following a discussion of recent observations on the cystine metabolism, the authors assume that the renal disease is the result of the nephrotoxic action of cystine.

16: 73-112 (Jan. 16) 1937. Partial Index

Nephropathic Action of Cystine and Cysteine. H. Beumer and R. Hückel.—p. 78.
*Gonadotropic Action of Extracts of Adrenal Cortex. F. Hoffmann.—p. 79.
Vitamin C Content of Human and Cow's Milk in Summer. Anna-Eva Correns.—p. 81.
*Significance of "Thoracic" Lead for Electrocardiographic Detection of Myocardial Lesions. F. Kisch.—p. 83.
Pancreas and Sodium Chloride Exchange. D. Adlersberg and M. Wachstein.—p. 85.
Action of Vitamin A on Ovary of Puberal Age. H. Fasold.—p. 90.
Minimal Sediment of Blood and Its Relation to Number and Hemoglobin Content of Erythrocytes. F. Frimberger.—p. 90.

Gonadotropic Action of Extracts of Adrenal Cortex.—Hoffmann describes animal tests which prove that the adrenal cortex contains a gonadotropic substance which differs from the surviving hormone of the cortex by its insolubility in lipoid solvents and which thus can be differentiated from the surviving hormone. This gonadotropic substance stimulates the ovaries, as is indicated by an enlargement of the organ and by an increased follicular maturation with luteinization of the theca interna. If the gonadotropic substance of the cortex is given together with small doses of the gonadotropic substance of the anterior hypophysis, the enlargement of the ovaries is more pronounced and corpora lutea are formed. Thus the action of the gonadotropic substance of the adrenal cortex corresponds largely to the well known actions of the gonadotropic substance of the anterior hypophysis. Regarding the mode of action of the gonadotropic substance of the adrenal cortex, the author says that the rapidity of the action seems to indicate a direct stimulation of the gonads; he considers an indirect action by way of the anterior pituitary unlikely, although the definite proof for this has yet to be furnished by suitable tests on hypophysectomized animals.

Thoracic Lead in Detection of Cardiac Lesions.—Kisch demonstrates that the thoracic lead "from the left leg to the region of absolute cardiac dulness" may disclose the presence of a myocardial lesion in cases in which the leads from the extremities as well as the clinical symptoms fail to indicate such a defect.

Medizinische Welt, Berlin

11: 37-70 (Jan. 9) 1937. Partial Index

Circulatory Disturbances of Hyperthyroidism and Hypothyroidism. H. Curschmann.—p. 37.
*Results of Determination of Diameter of Erythrocytes in Patients with Huntington's Chorea. F. von der Mark.—p. 41.
Treatment of Fractures of Leg in Home Practice. R. Poelchen.—p. 44.
Question of Abuse of Medicaments to Induce Sleep. H. Schubert.—p. 47.
Technic of Obliteration of Varicose Veins. F. Jaeger.—p. 50.
*Alimentary Dilatation of Aorta. S. Kreuzfuchs.—p. 52.
Experiences with Combined Administration of Calcium and Quinine in Obstetrics. P. Busch.—p. 52.

Diameter of Erythrocytes in Huntington's Chorea.—Von der Mark examined twenty-four cases of Huntington's chorea and detected an enlarged erythrocytic diameter in twenty-one. The author points out that this high incidence of an enlarged erythrocytic diameter suggests the possibility of a connection between Huntington's chorea and hepatic impairment. However, the literature reports only one case with indications of such a connection. The author states further than the enlargement of the erythrocytic diameter in Huntington's chorea might suggest a connection with an impairment of the bone marrow. On the other hand, he thinks that it might merely be a concurrence and not a relationship.

Alimentary Dilatation of Aorta.—In studies on the width of the aorta, Kreuzfuchs observed considerable degrees of dilatation in obese persons beyond the age of 35. He found that the development of the musculature causes no dilatation of the aorta; on the contrary, in athletes he often noticed a comparatively narrow aorta. However, fat tissues have a decided influence on the width of the aorta. In view of the fact that the

aortic dilatation in obese persons might be of an alimentary origin, the author designates it as alimentary dilatation of the aorta. He further directs attention to an alimentary component, particularly an excessive intake of cholesterol, in the pathogenesis of carcinoma and says that abnormal widths of the aorta are also quite frequent in carcinoma.

Monatsschrift für Psychiatrie und Neurologie, Berlin

94: 237-300 (Dec.) 1936

Migraine in Children and Young Persons. R. Hecker.—p. 237.
Studies on Action of Short Waves on Cerebrospinal Fluid, Particularly on Blood-Cerebrospinal Barrier. K. Haug.—p. 254.
*Improved Method of Demonstration of Morphine in Urine. C. A. Meier and W. Schlientz.—p. 266.
Experimental Psychology and Kretschmer's Constitutional Types. J. P. Braat.—p. 273.

Demonstration of Morphine in Urine.—The method described by Meier and Schlientz precipitates the morphine in the urine by means of sodium hydroxide plus sodium bicarbonate. The extraction of the free morphine base is effected by shaking with hot chloroform. Then the extract is concentrated and the residue is dried. Following fractionated vacuum sublimation, the morphine is demonstrated in the different fractions by means of Froehde's and of Marquis's reagents. The authors give a tabular report of the results they obtained with this method.

Wiener Archiv für innere Medizin, Vienna

29: 321-484 (Dec. 30) 1936. Partial Index

Unusual Case of Systemic Disease of Lymphatic Apparatus. K. Fellinger and R. Klima.—p. 321.
Primary Pulmonary Cancer. L. Berkesy.—p. 331.
*Observations on Action of Cevitamic Acid in Croupous Pneumonia. A. Hochwald.—p. 353.
Clinical and Experimental Investigations on Behavior and Significance of Thyrotropic Hormone in Blood. K. Fellinger.—p. 375.
*Action of Magnesium on Automatic Ventricular Rhythm in Digitalis Intoxication. C. Bloch and A. Pick.—p. 435.

Action of Cevitamic Acid in Pneumonia.—After reviewing the literature on the antiallergic action of vitamin C and on the allergic mechanism involved in pneumonia, Hochwald describes the observations he made in the therapeutic use of vitamin C in cases of pneumonia. He reports twelve case histories but admits that the majority of the cases were so-called one-day pneumonias in which a spontaneous retrogression cannot be definitely excluded. He gained the impression that, if cevitamic acid is given early and in large doses, it exerts a therapeutic action on the pneumonia which becomes manifest in an improvement of the general condition (prostration, dyspnea and so on), quicker reduction of fever, earlier disappearance of the local symptoms and normalization of the leukocytic blood picture and, in some cases, of the urine. After the second day of the disease the cases are no longer suited for the cevitamic acid therapy. Moreover, the treatment may fail, even if it is administered before this term.

Action of Magnesium on Automatic Ventricular Rhythm.—Bloch and Pick reproduce and discuss electrocardiographic records of the modification by magnesium of the automatic stimulus formation. They demonstrate how the automatism that develops in the auricular fibrillation resulting from digitalis intoxication can be influenced. In summarizing their observations they point out that, in a patient with total ventricular arrhythmia resulting from auricular fibrillation, moderate doses of strophanthin and digitalis have a toxic effect and lead to the appearance of a subordinate pacemaker. The impulses originating in this pacemaker appear as series of regular automatic beats, only exceptionally as occasional automatisms, and take the place of the series of the superordinated fibrillation rhythm slightly bradicardized and regularized by digitalis. Pressure on the carotid of the left side, by inhibiting the conduction, favors the appearance of automatism, the series being noticeably prolonged. On the basis of reports in the literature the authors decided to treat this automatic heterotopism resulting from digitalis intoxication with magnesium sulfate. They found that the intravenous injection of a 20 per cent solution of magnesium sulfate checks the automatism and that there appears a slightly retarded and less regular transmission of fibrillation impulses. The retardation of the irregular fibrillation rhythm indicates an inhibition of the atrioventricular conduction by the magnesium sulfate. However, this effect of the magnesium sulfate is only temporary, its duration being proportionate to the quantity injected (5 cc. acts five minutes, 15 cc. acts fifteen minutes). But even after the drastic action of magnesium sulfate has subsided, there still remains some effect in that automatism is no longer so pronounced.

Wiener klinische Wochenschrift, Vienna

50: 83-114 (Jan. 22) 1937. Partial Index

Antihormones. J. Bauer, E. Kunewälder and F. Schächter.—p. 83.
*Pathogenesis of Multiple Sclerosis. B. Dattner.—p. 87.
New Remedy to Reduce Maceration of Skin in Water Bed. W. M. Kreiner and R. Neurauter.—p. 92.
Bürger-Winiwarter's Syndrome, Angiosclerosis, Nicotine and Syphilis. J. R. Dreyfus.—p. 93.
Cancer Mortality in Vienna not Decreasing but Increasing. E. Fürth.—p. 96.

Pathogenesis of Multiple Sclerosis.—Dattner discusses the present status of the knowledge on the pathogenesis of multiple sclerosis, pointing out that it is not definitely known as yet. He cites various theories and describes his own studies on the problem. He admits that there is a bewildering mass of factors and observations, the organization of which is extremely difficult. First there is the fact that in the great majority of cases of multiple sclerosis there exist hematic changes which can be demonstrated by means of the complement fixation reaction for tuberculosis but also by means of an alcoholic cerebrospinal extract, so that it can hardly be regarded as specific. Then it has been shown that, in the blood of patients with multiple sclerosis, there are lipolytic substances and higher diastase values, factors which indicate hepatic impairment. Further, it has been demonstrated that the blood coagulation of patients with multiple sclerosis is considerably prolonged and more unstable than in normal persons, which apparently likewise indicates hepatic impairment, perhaps a disturbance in the fat metabolism. The systematic investigation of the gastric secretion of patients with multiple sclerosis revealed anacidity or hypacidity in a considerable percentage of the cases but also cases with hyperacidity; that is, conditions similar to those which have been observed in pellagra and beriberi. Moreover, in a considerable number of patients hematic changes were observed which were on the borderline of hyperchromic or hypochromic anemia. Finally, the symptomatology as well as the clinical course indicated many similarities with such avitaminoses as pellagra, beriberi and scurvy. The author shows that all these observations give rise to questions that cannot be answered on the basis of the present status of knowledge. At any rate, he considers the careful analysis of individual cases in the various directions as an aid to obtain a better insight into the pathogenesis of multiple sclerosis.

Vrachebnoe Delo, Kharkov

19: 739-826 (No. 9) 1936. Partial Index

*Pathologic Anatomy of Initial Forms of Osteo-Articular Tuberculosis in Children. W. G. Stefko.—p. 755.
Mechanism of Disorders of Carbohydrate Metabolism in Pulmonary and Experimental Tuberculosis. A. E. Rabukhin.—p. 767.
Alimentary Ketonemia in Different Forms of Pulmonary Tuberculosis. B. S. Bunina and A. B. Silberstein.—p. 771.
Mineral Metabolism in Tuberculous Children. P. D. Ivaitskaya.—p. 773.
Apical Tuberculosis. B. M. Khmelnitskiy.—p. 775.
Differential Diagnosis of Small Nodular Form of Pneumoconiosis and Tuberculosis. I. I. Moshkovskiy.—p. 787.

Osteo-Articular Tuberculosis in Children.—Stefko states that in tubular bones of children and adults one may observe isolated "primary" tuberculous foci that develop by the hematogenous route from tuberculous foci in the lungs or in the lymph nodes during the stage of primary infection. Such foci have been found by him in 80 per cent of the cases showing disease of bones and joints. According to their structure and origin, he distinguishes five forms of isolated foci: (1) intraosseous perivascular, (2) lacunar (fibroid caseous), (3) fibrocaseous (Volkmann and Kornev), (4) calcified and (5) capsular (bursal) foci. These foci appear chiefly in childhood (during the ages of 3 and 4 years) and may remain in a latent state for an indefinite time, accompanied by slight clinical syndromes or without manifestations. For the most part they cannot be revealed by x-ray investigation. When exacerbation of such foci takes place, one may observe (1) the appearance of new and smaller foci (osseous reinfections), (2) opening into the joint capsule or joint cavity and (3) development of proliferative processes in the form of intra-osseous growths of granu-

lation tissue of the focus, with subsequent rarefaction of the surrounding spongy tissue. The two latter phenomena are accompanied by softening processes (appearance of leukocytes within the old caseosis and autolytic dissolution) of the "primary" foci. Tuberculosis of the tubular bones and joints in children after 5 years of age is mostly due to progressive development or reactivation of different primary osseous foci. The exacerbation of such foci in the adult state probably constitutes the basis of osteo-articular tuberculous disturbances (trochanteritis, coxitis) in this age. The cause of such exacerbations of the primary foci remains unknown.

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Rare Case of Carcinoma of Pancreas. P. Ruitinga.—p. 241.
Carbon Dioxide Content of Blood of Right Side of Heart in Case of Simple Communication Between Cardiac Ventricles. P. Govaerts and J. Lequime.—p. 260.
*Relation Between Hypophysis on the One Hand and Function of Stomach and Bone Marrow on the Other. I. Snapper.—p. 265.
Connection Between Hemolysis and Coagulation. F. L. J. Jordan.—p. 321.
*Diabetes Mellitus and Exophthalmic Goiter. M. Labbé.—p. 324.
*Bacteremia and Bacterial Localization. J. van der Hoeden.—p. 337.
Life Expectancy of Persons Who Had Pulmonary Tuberculosis. J. Siegenbeek van Heukelom.—p. 346.
*Fever Therapy of Intractable Neuralgias. D. Klinkert.—p. 380.

Relation of Hypophysis to Stomach and Bone Marrow.—In five patients with signs of insufficiency of the anterior pituitary, Snapper observed a complete gastric achylia. In one patient the gastric achylia produced a completely developed pernicious anemia and in another a hyperchromic blood picture. In the other three patients the blood showed no abnormalities, but there were more or less severe signs of systemic disease of the spinal cord. The author thinks that a connection may be assumed between insufficiency of the anterior pituitary and gastric achylia, which later may cause changes in the blood or lesions of the spinal cord.

Diabetes Mellitus and Exophthalmic Goiter.—Labbé directs attention to the concurrence of exophthalmic goiter and diabetes mellitus. After reviewing the literature on this problem, citing among others several of his own earlier reports, he points out that the association of the two diseases is of a frequency that cannot be explained as mere coincidence and must be regarded as the result of an endocrine relationship. Usually the exophthalmic goiter appears first and the diabetes develops later; however, in exceptional cases the diabetes may appear first. The simultaneous appearance of the two diseases suggested a thyroid diabetes, dependent on a disturbance in the thyroid glycoregulation and differing from the ordinary pancreatic diabetes. Observations on the therapy of such cases indicate that the treatment of the thyroid disease reduces the severity of the diabetes but does not cure it, doubtless because it counteracts only the hyperthyroid glycoregulatory disorder but not the pancreatic insufficiency.

Bacteremia and Bacterial Localization.—Van der Hoeden describes five cases in which, by local trauma, organisms preexisting in the damaged region were carried into the blood stream. Endocarditis lenta was caused by Streptococcus viridans after tooth extraction; paratyphoid developed after cholecystectomy; Bacillus proteus bacteremia resulted from operation in infected tissue; fever and rigor were caused by streptococci after catheterism, and another case of proteus bacteremia occurred after wound treatment. Further, the author cites cases of bacterial localization; for instance, Streptococcus viridans on congenitally defective aortic cusps, tubercle bacilli after mechanical trauma, and pneumococci at the site of injection after pneumonia. The author concludes that these clinical observations provide more insight into the mechanism of bacterial infections and demonstrate the risk of even minor interventions.

Fever Therapy of Intractable Neuralgias.—Klinkert reports a number of cases of refractory neuralgia which he cured by means of fever therapy. He induced the fever with a preparation consisting of the proteins of nonpathogenic bacteria. He thinks that the cure was brought about by the acceleration of the blood and lymph stream during the artificial fever. He recommends artificial fever therapy for such cases of neuralgia in which physical methods are unsuccessful or cannot be employed for social reasons.

Finska Läkaresällskapets Handlingar, Helsingfors

79: 933-1027 (Nov.) 1936

*Possibilities of Diagnosing Recent Primary Tuberculous Focus in Lung: Comparative Clinical-Pathologic Study. I. Wallgren.—p. 933.
*Contribution to Knowledge of Relation Between Rickets and Mental Deficiency. T. Brander.—p. 957.
Contribution to Knowledge of Relation Between Enlarged Tonsils and Mental Deficiency. T. Brander.—p. 969.
Acute Ulcer of Vulva: Three Cases. B. A. Johansson.—p. 982.
Occurrence of "Dowicide" Eruption in Finland and Possibilities of Preventing Its Occurrence. H. Groth.—p. 991.
*Biologic Action of Roentgen Rays on Bacterium Coli. E. Unonius.—p. 999.

Recent Primary Tuberculous Focus in Lung.—Wallgren says that Verse's investigations together with Rossle's and his personal observations indicate that the noncalcified primary focus in the lung is not generally demonstrable in the roentgenogram, even though the focus may be the size of a hazelnut. In most cases of recent infection with pulmonary tuberculosis a primary focus is present, but it does not absorb enough roentgen rays to become visible. In forty-one student nurses the tuberculin test was negative at the start of training. When in the course of their hospital work the reaction became positive, roentgen examination was made; in only one case was a shadow in the lung parenchyma demonstrated which might be due to a primary focus; in two there were shadows of doubtful origin, in thirty-eight the results were negative. Three other cases are described in which recent tuberculous foci in the lungs were confirmed at necropsy but had not been demonstrable roentgenologically during life.

Relation Between Rickets and Mental Deficiency.—From somatic and psychologic examination of 375 premature children ranging in age from 7 to 15 years, Brander found that in the group with graver traces of earlier rickets there was greater frequency of feeblemindedness, cases bordering on feeblemindedness and ordinary stupidity, while the number of normal and talented children was correspondingly less. Since the defects in intelligence were of relatively mild degree, he concludes that rickets can hardly be of practical significance in the etiology of oligophrenia. There was no evidence for or against rickets as leading to lasting mental deficiency of milder degree, but both rickets and defective mental development might have the same cause, as, for example, premature birth. It seems to the author fairly certain that mental deficiency in itself is something which promotes the origin of rickets.

Biologic Action of Roentgen Rays on Colon Bacillus.—Surface cultures of colon bacillus were irradiated with hard rays in a dose of 500 or with soft rays in a dose of 2,000 roentgens. New cultures were again made from the mature colonies and the same dose was again given. This procedure was repeated until the bacteria in the experiment with hard rays had received ten doses and those in the experiment with soft rays twenty doses. On examination of the irradiated bacteria, Unonius found no change with regard to grape, milk and cane sugar, mannite and salicin, formation of indole, agglutinability, movement and p_H tolerance.

Hospitalstidende, Copenhagen

79: 1337-1356 (Dec. 22) 1936

*Cause of Fog Catastrophe in Meuse Valley in December 1930. K. Roholm.—p. 1337.
Bronchial Asthma: Additional Fatal Case. J. V. Jørgensen.—p. 1350.

Cause of Fog Catastrophe in Meuse Valley in 1930.—Roholm describes this mysterious fog catastrophe near Liége, Belgium, which caused several thousand cases of disease and sixty deaths. He reviews acute and chronic fluorine intoxication and analyzes the details of the catastrophe, showing that there was probably an acute fluorine intoxication. He asserts that, of the twenty-seven factories in the region, fifteen belonged to branches of industry which either use raw materials containing fluorine (superphosphate factories, zinc works) or add fluorine combinations to raw materials (steel work, iron foundries, glass works) with the possibility of giving off gaseous fluorine combinations (SiF_4 HF) in the smoke from the chimneys. Special climatic and topographic conditions played a part in the development of the catastrophe. Since the toxicity of fluorine combinations is considerable and well known in industry, factories that give off gaseous fluorine combinations should be required effectively to remove these substances from the chimney smoke.